JUNE 25, 1951

STEEL

The Weekly Magazine of Metalworking

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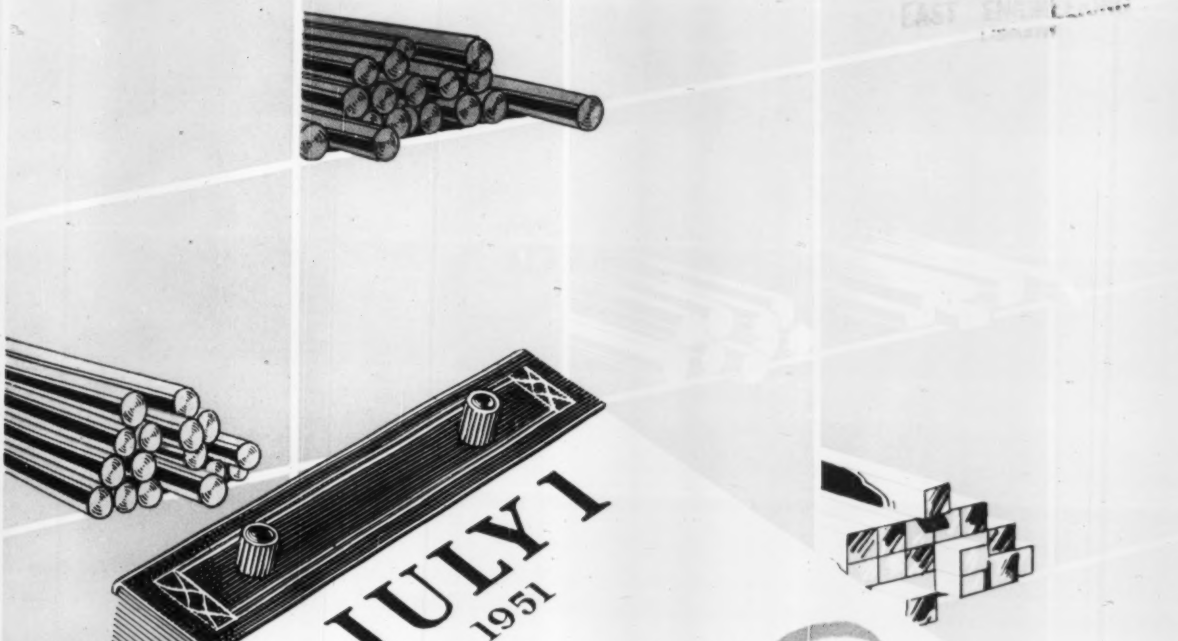
JULY 1
1951
CMP
becomes
effective
—p. 55

Steel Pricing Fight Ends, p. 47

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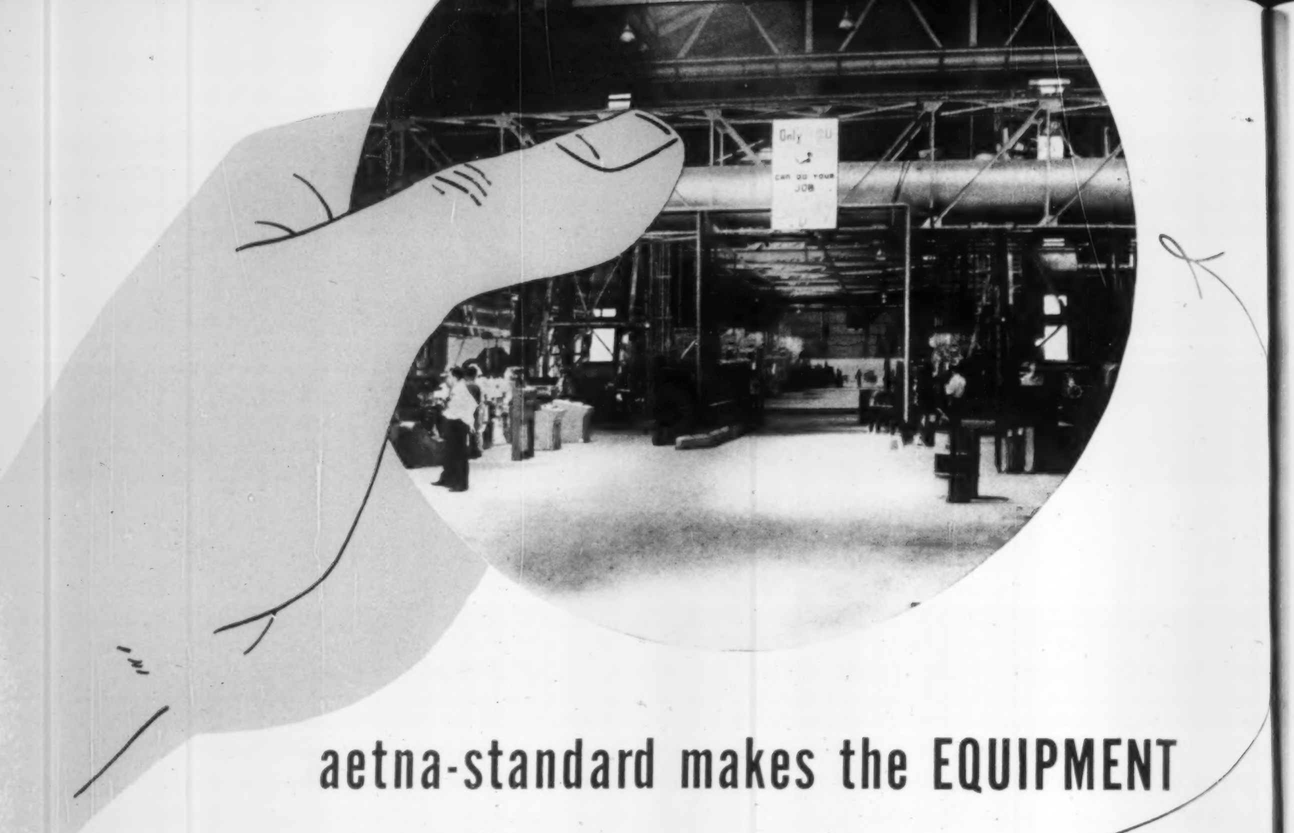

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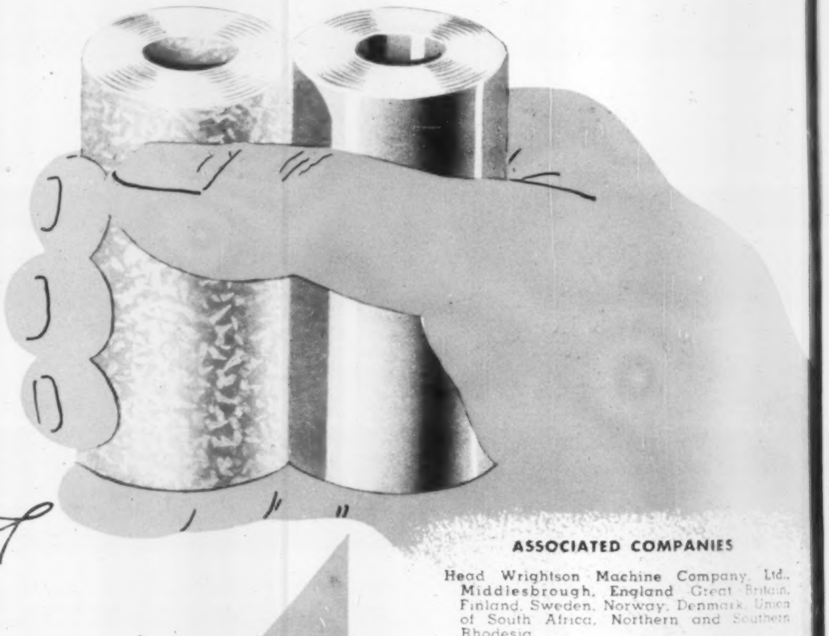

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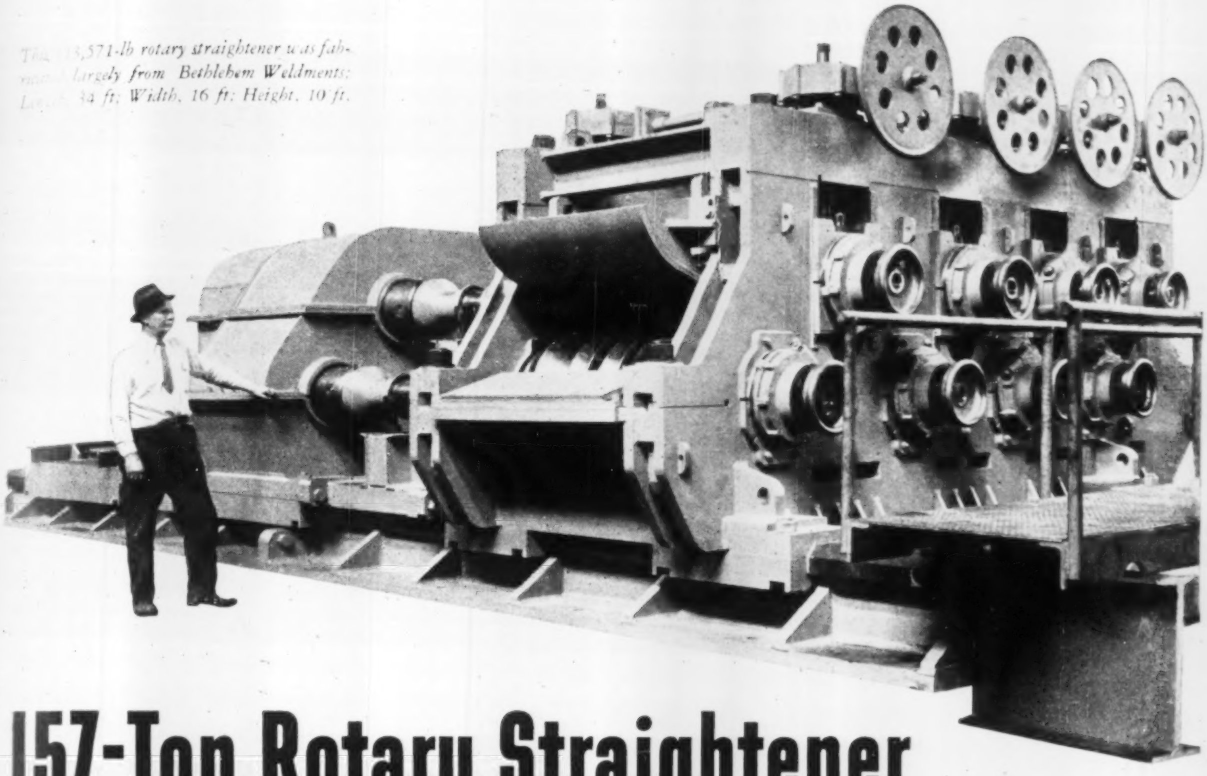

This 313,571-lb rotary straightener was fabricated largely from Bethlehem Weldments; Length, 34 ft; Width, 16 ft; Height, 10 ft.

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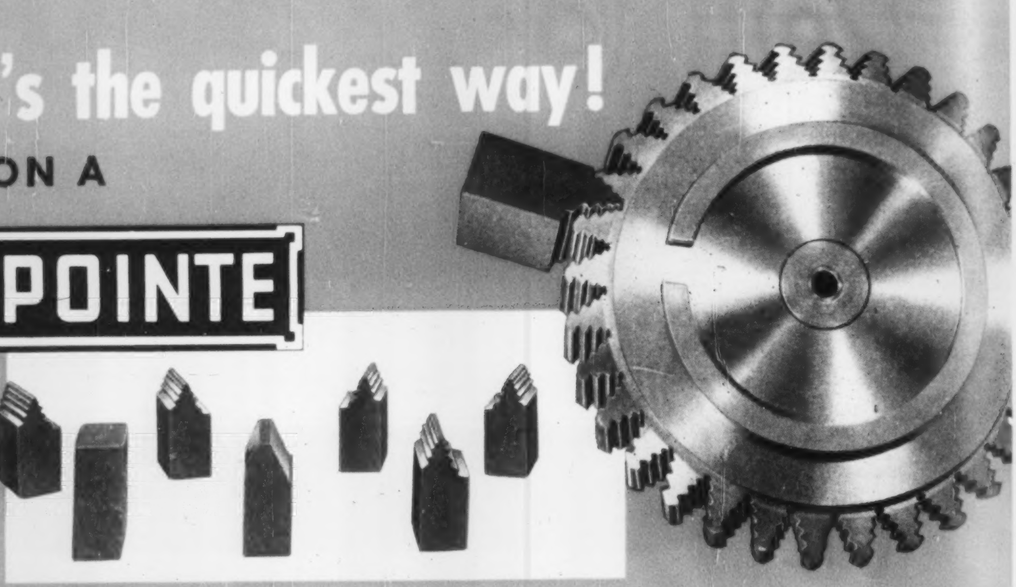

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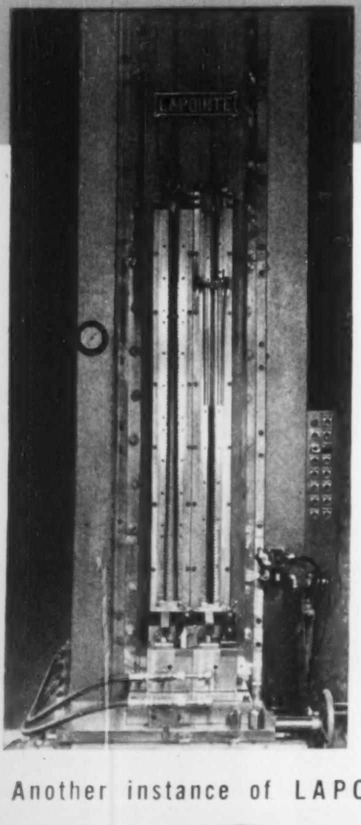

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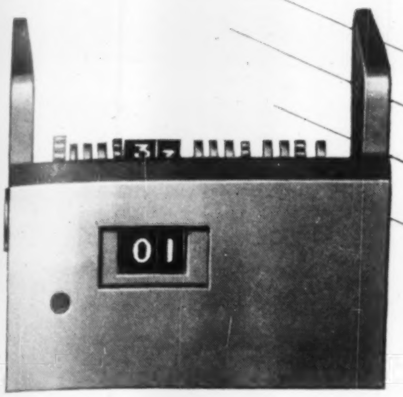

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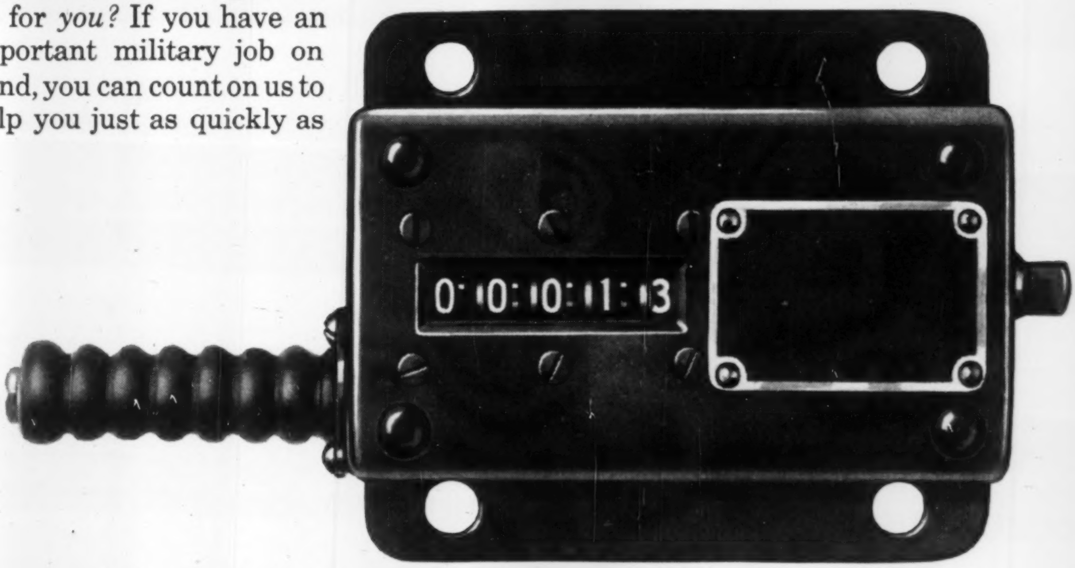

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STEEL

The Weekly Magazine of Metalworking

VOL. 128 NO. 26 JUNE 25, 1951

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Next Week **... Midyear Review and Forecast Issue ... Hidden Costs Exposed by Production and Inventory Control ... Adequate Instrumentation Minimizes Welding Variable ... Air Actuation Cuts Lost Time in Manipulating Drilling Jig**

Published every Monday by the Penton Publishing Company, Penton Building, Cleveland 13, Ohio. Subscription in the United States and possessions, Canada, Mexico, Cuba, Central and South America, one year $10; two years $15; all other countries, one year $18. Single copies (current issues) 35 cents. Metalworking Yearbook issue $2.00. Entered as second class matter at the postoffice in Cleveland, under the Act of March 3, 1879. Copyright 1951 by Penton Publishing Co.

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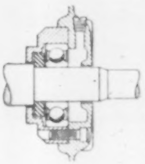

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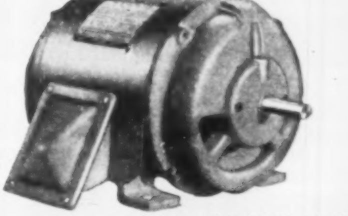

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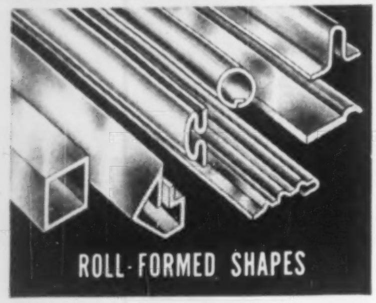

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Behind the Scenes . .

Business Dictionary (Unrevised)

A foreigner with just an academic knowledge of the American business man's lingo would have a tough time. For the benefit of our foreign readership—and maybe for you, too—we publish this handy glossary:

A program — Any assignment that can't be completed by one telephone call.

To expedite—To confound confusion with commotion.

Channels—The trail left by interoffice memos.

Co-ordinator—The guy who has a desk between two expediters.

Consultant (or expert)—Any ordinary guy more than 50 miles from home.

To activate—To make carbons and add more names to the memo.

To implement a program—Hire more people and expand the office.

Under consideration—Never heard of it.

Under active consideration — We're looking in the files for it.

A conference—A place where conversation is substituted for the dreariness of labor and the loneliness of thought.

Reorientation—Getting used to working again.

Reliable source—The guy you just met.

Informed source—The guy who told the guy you just met.

Unimpeachable source—The guy who started the rumor originally.

A clarification—To fill in the background with so many details that the foreground goes underground.

We are making a survey—We need more time to think of an answer.

Note and initial—Let's spread the responsibility for this.

See me, or let's discuss—Come down to my office. I'm lonesome.

Give us the benefit of your present thinking—We'll listen to what you have to say as long as it doesn't interfere with what we've already decided to do.

Will advise you in due course—If we figure it out, we'll let you know.

To give someone the picture—A long, confused and inaccurate statement to a newcomer.

Coming Up

Coming up next week, July 2, is STEEL's annual midyear review — a look at what has happened economically in the first six months and a forecast of what will happen in the second half. Months ago Editor Irwin Such, Managing Editor Walt Campbell and their cohorts started planning for the issue. They analyzed production, order, shipment and backlog statistics for all segments of the metalworking industry plus basic economic indicators.

From that was prepared a list of questions which STEEL's editors throughout the United States put to metalworking men, bankers and economists in their areas. When all the material from the questions came in, the final story was written by Associate Editor John Morgan.

The editors are turning out all kinds of special reports these days. A humdinger is the one which is an insert in this issue. Much the same gathering techniques were used on it as on the midyear story running next week. Washington Editor Ed Kreutzberg did yeoman service on the government end of the deal. Associate Editor Vance Bell did most of the final assembling job.

65—Count Them—65

When Ed Birkner was working on his fastener story, which appeared in the June 18 issue beginning on page 53, he wanted to illustrate the universality of fasteners by telling how many there were in some common object like the telephone, as suggested by Bill Chandler, president of Chandler Products Corp.

He posed his problem to the Ohio Bell Telephone Co. A day or two later a special messenger arrived with a large box. In it was a disassembled telephone and a note to the effect: Here the fasteners are; you count them. He did—36 rivets, 16 screws, 2 lock washers, 8 washers, 2 nuts and 1 stud.

Puzzle Corner

First in with the correct answer to the June 11 problem about the copper bowl was Robert W. Huff of Canton, O. The bowl was $3/8$ inch thick.

In a potato race, each contestant started from a basket, ran 3 yards to the first potato, returned and deposited the potato in the basket. He repeated that with each of the other potatoes, but each potato was 3 yards farther from the basket. If each contestant picked up 24 potatoes in that manner, what was the total distance he ran.

Shrdlu

(Metalworking Outlook—Page 39)

The Metalworking Outlook

June 25, 1951

Steelmen Revolt on Full CMP

The steel industry is revolting against NPA's statements that CMP will "probably" be regulating 100 per cent of the steel distribution by Oct. 1. Steelmen say that such statements were made without consulting their Steel Products Industry Advisory Committee and that complete controls are now unnecessary and unjustified. "NPA doesn't have the facts," says the committee. "Direct and indirect defense needs won't exceed 10 per cent of output. Why control 100 per cent just to take care of 10?" The committee has passed a resolution asking NPA to abolish all steel controls except those for direct and indirect defense.

Enough Steel by 1952?

As support for its charges, the committee says that there is definite evidence that steel demand is slackening off. The evidence thus far has been mainly on the warehouse levels where the small steel buyers are reducing their purchases. The committee predicts that within six months there will be steel surpluses. Significance: The committee may be unduly optimistic about the steel outlook, but there are real signs of reduced demand. NPA Administrator Manly Fleischmann will be forced to pay some attention to the steel industry charges.

Fingers Burned on Controls

The steel industry charges are one important reason why the Administration has made no headway with Congress in its requests for stiffer economic controls. The White House has had its fingers burned on the issue of legislative controls and will move slowly from now on. Its stand henceforth will be: Keep what curbs we now have, but modify them as circumstances dictate.

Tool Builders Get Relief

Machine tool manufacturers are about to get relief from the price order, CPR 30. Last week a supplementary order to CPR 30 was in the process of being cleared in Washington. It will provide that machine tool makers will be reimbursed for increased costs assumed through subcontracting of business, for overtime and for differentials depending on hours worked. Significance: The concessions provide the foot in the door for makers of other types of machinery, practically all of whom feel they merit special treatment, too.

Trial Run on Scrap Drive

NPA's Cleveland office will blueprint a trial run scrap drive in its area (Ohio, Michigan and Kentucky). Its experience will be used to modify procedures for drives in other regions. This will be no pots-and-pans drive, but will be directed toward the big generators of scrap: Railroads, auto wrecking companies, federal agencies. In

Production-Engineering News—p. 109   The Market Outlook—p. 143

Cleveland, NPA is persuading the city transit system to scrap some of its old equipment and rails.

Towards Industry Dispersal

Watch for government action to encourage—perhaps even force—greater dispersal of industry. One way that could be managed would be stipulation that defense loans or certificates of necessity be granted only if the government approves the location. That's just the approach taken in a proposal introduced in the Senate by Sen. Joseph C. O'Mahoney (Dem., Wyo.). In the present expansion program, the trend has been toward greater concentration, not dispersion.

Construction Will Continue High

The government plans to continue through 1952 in its present program of permitting the erection of 850,000 new dwellings yearly. It also proposes to allow total construction, including industrial and home building, to run at about 80 per cent of 1950 levels. American business now estimates its expenditures for new plant and equipment for the second quarter of this year at the record rate of $6.4 billion, and anticipates a continuation of that rate in the third quarter.

Unions Eye Funding Plans

Union leaders—both CIO and AFL—are giving a closer look at the financing arrangements for the pension plans they have won. Cause of the flurry of alarm: AFL Electrical Workers and United Mine Workers are having troubles with their funds. Even though most unions will find that the funding arrangements are sound, they may nurse their fears until contract-opening time when they will have an excuse to try for bigger benefits.

Straws in the Wind

Don't expect final action by Congress on the new tax bill until about September . . . Public sale of much of what was left of the old Lustron Corp. equipment in Columbus, O., occurs June 29 . . . Some companies are beginning to market nails in square paper cartons, replacing the old keg shipping methods . . . Packing houses are overhauling ancient machinery to pack the West's record 1951 food crops . . . General Electric Co. has developed a new, more powerful jet engine.

What Industry Is Doing

Look for no immediate drastic changes as a result of the steel industry-U.S. settlement of the pricing case (p. 47) . . . Ordnance is developing methods to save materials (p. 48) . . . Chrysler Corp. is looking for 2000 more suppliers (p. 49) . . . Western steel consumers can expect better supplies eventually because the area's steel capacity expansion will continue (p. 51) . . . A dollar-a-year man's position in Washington is made uncertain by new Justice Department rulings (p. 90) . . . General Motors Corp. discoveries may revolutionize the paint industry (p. 95) . . . For your complete guide to CMP, turn to page 55.

AS THE EDITOR VIEWS THE NEWS STEEL

June 25, 1951

Too Much "Wolf!"

This week House and Senate will buckle down to the job of determining what to do about extending and revising the Defense Production Act which expires June 30. President Truman and key men in his administration have pleaded strongly not only for a continuance of present controls but also for vastly enlarged powers which they contend are necessary to combat inflation. Most union labor leaders side with the administration.

Opposed to these proponents of more and stronger government controls are numerous industrial, agricultural, merchandising and other groups which seriously question the need of more power for the government. Many of them are strongly in favor of dropping price and wage controls immediately. To date, members of the Banking and Currency committees of the House and Senate seem to be more impressed by the arguments of the opposition than by those of the administration.

Therefore, it is likely that Congress will extend the Defense Production Act six months or a year beyond June 30 but will refuse to grant the President most of the additional powers he requests. The law which Congress passes will be strictly a stop-gap measure and it probably will not please many persons on either side of the argument.

If it turns out that the resultant bill is unsatisfactory, much of the blame will fall upon the shoulders of the President and his associates. They have failed to impress the public with their sincerity in regard to many aspects of the problem of inflation. They likewise have failed to convince people that the government needs more power or authority than it now has.

Beyond these factors is a growing resentment on the part of Congress and of the public against the Truman administration's repeated use of the "fear" or "scare" technique in order to jam its requests through Congress. "If you don't give me more power, terrible things will happen."

Not only has Washington cried wolf too often but it also has ignored entirely the great weapon against inflation which it could wield by working for economy in government expenditures. No wonder the people are unimpressed!

E. L. Shaner

EDITOR-IN-CHIEF

CMP—WHAT, WHY, HOW? Last May when National Production Authority was holding clinics in principal cities to explain how the Controlled Materials Plan will work, the number of industrialists who turned out for these meetings far exceeded the expectations of everybody. The intense interest thus manifested prompted the editors of this publication to prepare a concise guide to CMP for the benefit of its readers.

In 32 pages in this issue you will find the answers to most of your questions. They explain thoroughly what CMP is, why it is necessary and how it works. There is a helpful chart that shows how CMP works for "A" and "B" products. Texts of CMP regulations are reproduced for reference purposes and NPA materials orders, regulations and delegations are listed. A directory of DPA and NPA officials is provided, as well as a roster of NPA field offices.

We believe you will find this "Guide to CMP" an extremely useful reference work during the months ahead. —pp. 55-86, inc.

* * *

A TRUCE ON PRICING: Federal Trade Commission at long last has given tentative approval to a compromise settlement on pricing policy worked out between FTC and the steel industry. FTC stands on its findings against the industry and continues to order that it not engage in certain practices. The steel industry does not admit these findings but agrees not to contest them.

Essence of the settlement is found in these words of the agreement: "It is understood that FTC is not acting to prohibit or interfere with delivered pricing or freight absorption as such when innocently and independently pursued, regularly or otherwise, with the result of promoting competition." In short, sellers can quote any price as long as they keep clear of collusion and discrimination.

The truce may be somewhat academic in the present sellers' market, but in a buyers' market freight absorption will become prevalent. —p. 47

* * *

PENALIZING ABILITY: Department of Justice is suspicious of industry men in government. It has issued ruling after ruling discriminating against part-time and dollar-a-year men loaned from industry and favoring full-time government employees. Pressure in this direction has mounted to the point where Office of Price Stabilization has fired five of its valuable industry men in one division. Should this ax-wielding spread to National Production Authority, the defense program would suffer severely from lack of men who understand industry.

Justice department officials justify their action on the ground they must prevent private companies from benefiting in defense work by reason of having employees in defense agencies. Certainly safeguards against this contingency can be set up without barring competent men from temporary public service. —p. 90

* * *

WIRE ROPE A MACHINE: In an informative article on the role which proper lubrication plays in lengthening the life of wire rope, two lubricating engineers introduce a rather novel concept of the nature of wire rope. They discard the simple idea that it is a mere assembly of numerous small steel wires twisted around a core and used as a compromise between solid steel wire and ordinary hemp rope for the purpose of securing the strength of steel and the flexibility of hemp.

Instead, they contend that wire rope actually is a complex machine composed of many moving parts requiring precise engineering in its design and skill and care in its manufacture. Individual wires in a rope are subjected to a combination of stresses including tension, compression, torsion, shear and fatigue which are extremely complex and practically incapable of analysis.

Obviously this machine concept affords a logical basis for emphasizing the importance of lubrication in the manufacture and maintenance of wire rope. —p. 110

* * *

ORE FROM OVERSEAS: Delivery at two nearby Maryland ports of high grade iron ore from two new foreign sources marks the beginning of a noteworthy trend on the part of American steel producers to rely more and more upon ore imports.

Recently the first cargo of hematite from the mines of Iron Mines Co. of Venezuela at El Pao, State of Bolivar, arrived at the Sparrows Point, Md., plant of Bethlehem Steel Co. Shipment of this initial cargo culminates an extensive program of exploration and development by Bethlehem in Venezuela during a period of 15 years. Last week the first 10,000-ton cargo of high grade ore for Republic Steel Corp. was received at Baltimore from the deposits of Liberia Mining Co. about 41 miles north of Monrovia, Liberia. Republic acquired a major share of stock in the Liberia company in 1949.

From now on we can expect a mounting tonnage of imported ore to augment our domestic resources. —pp. 126, 131

More Freedom for Steel Pricing

End of FTC's long fight against steel industry's pricing practices permits producers to quote any prices they wish, provided they act independently and don't discriminate

WHAT will happen to steel prices now that the government and the steel industry have agreed to end their long, drawn-out legal battle over pricing practices?

There probably will be no drastic change immediately. Any changes likely will come gradually, in an orderly manner and as business conditions necessitate them.

Moving to terminate the legal battle, the FTC gave tentative approval to a settlement worked out between the FTC and the steel industry. The tentative approval will not be entered as the commission's decision for 30 days. During this period, the decision will be on the public record in the commission's office and available for inspection.

The settlement has "face-saving" features for both sides. The FTC makes findings against the steel industry and orders the industry not to engage in certain practices. The steel industry does not admit the findings but it agrees not to contest them.

Clears the Air—The principal good stemming from the settlement is that it helps clarify what pricing practices the industry can legally use.

The settlement concludes the latest round in the government's legal encounters against the steel industry's pricing practices. Since the late 1920s the government has been waging fights against certain practices; the latest round began in November, 1947. The FTC said that if the settlement had not been reached, it is entirely possible that the steel case would have been before the commission and the courts for another five or six years. "It is such costly and time-consuming litigation that the commission seeks to avoid whenever possible," the commission commented.

Take Your Choice—Essence of the settlement is that steel producers may compete freely for business by quoting to consumers any prices they wish to name—provided that the producers act independently and not in agreement or collusion with each other, and refrain from illegal discrimination. This freedom to quote any prices they wish to name includes the privilege of absorbing freight. The right to absorb freight charges is acknowledged in the agreement in this language: "It is understood that the Federal Trade Commission is not acting to prohibit or interfere with delivered pricing or freight absorption as such when innocently and independently pursued, regularly or otherwise, with the result of promoting competition."

Practically all of the large steel producers discontinued absorption of freight after the U. S. Supreme Court handed down its decision in the Cement Institute case; the steel companies' interpretation was that mill pricing was the only selling method that would keep them from running afoul the antitrust laws. Some small mills, however, never dropped freight absorption in favor of mill pricing.

Test Never Came—It has long been recognized that mill pricing is vulnerable and that it would become subject to violent attacks under normally competitive conditions. But steel has been in heavy demand ever since adoption of the mill pricing system; thus there has been a postponement of the test that would come when the present sellers' market gives way to a buyers' market.

In the settlement the FTC gives its blessings to the mill pricing system with a provision directed against any agreement or planned common course of action to fail "to quote or to sell and deliver any steel products f.o.b. at the plant of manufacture thereof."

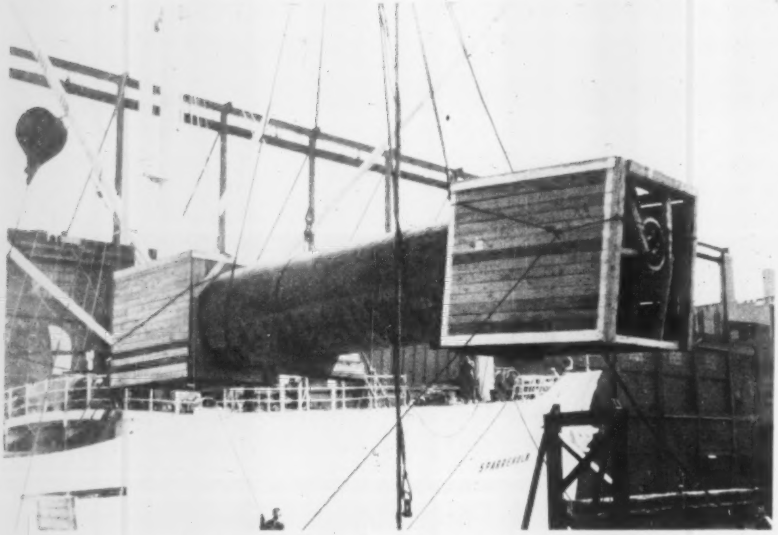
As long as steel is in such strong demand as it is currently, there probably will not be much inclination on the part of producers to absorb freight charges. Thus, it is likely the present practice of quoting prices at the mill, with the purchaser paying the freight charges to his plant, will continue.

Change Would Be Gradual—Absorption of freight by producers probably would come gradually as they find it necessary, product by product or territory by territory, to do so. For instance, if the demand for bars fell off while the demand for pipe held up, some producers of bars might start absorbing freight charges on bars. Similarly, if one steel-producing area were producing much more tonnage than it could sell within its normal sales area it might reach out farther for more customers and absorb freight charges in the course of acquiring them.

FTC attorneys say that the steel case agreement, in permitting producers to adopt and maintain any pricing systems so long as they act independently, represents no new policy as far as the commission is concerned.

All the confusion which followed in the wake of the cement case decision, they say, came not from the decision itself but from the interpretations which private attorneys incorrectly placed on the cement de-

Peace Comes in Price Fight Between FTC and Steel Industry



DRUMS FOR DENMARK: The boiler drum being lifted aboard the *Sparreholm* of Swedish-American Lines is part of the first of two ECA boilers ordered by the Isefjord Power Co., Copenhagen, Denmark. Babcock & Wilcox Co. fabricated the boilers at its Barberton, O., works. The complete boiler unit with water-cooled furnace will be about 11 stories high when erected. It will be fired with pulverized coal and can generate 630,000 pounds of steam per hour

cision. In January, 1949, the commission advised the Chamber of Commerce of the State of New York that "the law permits a single enterprise to use any pricing practice it may choose."

Trust Suit Names Wheel Makers

The Department of Justice has named three companies in a civil antitrust suit, charging them with "combining and conspiring to restrain and monopolize trade in the manufacture and sale of stamped metal wheels, in violation of the Sherman Act."

Named as defendants in the suit are Kelsey-Hayes Wheel Co., Detroit, Budd Co., Philadelphia and Motor Wheel Corp., Lansing, Mich. National Wheel & Rim Association Inc. is named as a co-conspirator, but not as a defendant.

Equipment Makers Sued

Three civil antitrust cases charging machinery and equipment producers with illegal restraint of trade were filed by the U. S. Department of Justice last week.

One involves the cast iron and cast steel roll industry, one is against manufacturers of sheet chargers used to feed sheet to rolling mills, and the third affects builders of cooling beds.

Defendants in the case against the roll industry are: Roll Manufacturers Institute, Pittsburgh; Aetna-Standard Engineering Co., Youngstown; Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.; Blaw-Knox Co., Pittsburgh; Continental Foundry & Machine Co., East Chicago, Ind.; Hyde Park Foundry & Machine Co., Hyde Park, Pa.; Mackintosh-Hemphill Co., Pittsburgh; Mesta Machine Co., Pittsburgh; National Roll & Foundry Co., Avonmore, Pa.; Ohio Steel Foundry Co., Lima, O.; Youngstown Foundry & Machine Co., Youngstown; and United Engineering & Foundry Co., Pittsburgh.

In the suit against the makers of sheet chargers the defendants are: The Logan Co., Louisville; Mathews Conveyer Co., Ellwood City, Pa.; Mesta Machine Co.; Palmer-Bee Co., Detroit; Standard Conveyor Co., North St. Paul, Minn.; and United Engineering & Foundry Co.

Defendants in the suit against manufacturers of cooling beds are: Birdsboro Steel Foundry & Machine Co. and Mesta Machine Co.

FRB May Aid Small Business

A bill to provide working and investment capital for small business, introduced by Sen. A. Willis Robertson (Dem., Va.), would authorize Federal Reserve banks to guarantee any chartered banking institution against loss of principal or interest on loans of no more than ten-year maturity to a business which cannot get help on a reasonable basis from customary sources. Senator Robertson is one of a group seeking abolition of the Reconstruction Finance Corp. and proposes the Federal Reserve guarantee arrangement as an alternative to the present lending powers of the RFC.

Processes Save Metal

Ordnance officer outlines eight processes that will help save materials

ARMY ORDNANCE, in co-operating with industry, has come up with manufacturing processes designed primarily to save materials.

Gen. Merle H. Davis, chief of the Ammunition Branch, Industrial Division of Ordnance, outlined these eight processes at a meeting of the Detroit Chapter of the American Society of Tool Engineers:

Adapted—1. Used in production of breech rings for major caliber cannon is a technique called multiple-ram close-die forging borrowed from the oil well equipment industry which uses it for manufacture of heavy valve bodies. This method consists of initial external forming in a hollow closed die using normal vertical hydraulic pressure equipment, plus use of horizontal pressure systems acting through die openings to upset forged internal surfaces and by extrusion to complete formation and sizing of external surfaces.

Breech rings of superior mechanical properties have been produced in pilot installations. Ductility is improved up to 200 per cent, and up to 150 per cent improvement in impact resistance at yield strengths over 100,000 psi has been recorded while cost has been reduced approximately 50 per cent.

Trepanning—2. The trepanning technique for production of tubes from solid rolled or forged bars is being adapted to cannon tube production. This consists of using a tubular cutting head, mounting a single point cutter, for machining an annular hole and leaving an untouched center bar section.

Less metal is removed in chips and higher cutting speeds are possible. Carbide tools may be used. Few machine tools are necessary, and the unit price should be reduced.

New Method—3. For straightening, achieving perfect roundness and reasonably uniform wall thickness in short lengths of seamless tubing, a new method has been developed at Edgewood Arsenal. This consists of a composite ram mounting a series of graduated rings, somewhat like a broach, although no metal is removed by it. The graduated sizing rings are interspersed with smaller rings around which oil circulates. Pushing this ram through the tube straightens and sizes it. The exterior is then turned off to obtain uniform wall thickness.

The technique is applicable for mortar tubes and certain ammunition items such as some of the rockets.

High Speeds—4. High speed machining—using a motor several times larger than normal mounted on a strengthened machine tool—obtains "fantastic" rates of metal removal. Important as that may be, General Davis says, "Our major efforts at the moment are being put on processes which save machining," not speed it.

A Success—5. Fabrication of cartridge cases from steel. Admitting that World War II's experience had been "practically a flop," General Davis now declares the process is completely successful. "Except for several of the small calibers, we can make from steel in normal production every type of cartridge case and get a product which outperforms its brass counterpart."

Zealous—6. So good is the steel cartridge case process that contractors "now cannot be restrained in their zeal" to use cold drawing in other ammunition items and projectiles. One makes a mortar shell by hot forging the cup, then cold draws the shell from the cup. He competes with cold extrusion contractors. The World War II method of welding two longitudinal cups apparently cannot compete. The margin seems to be the cost of machining off the flash.

A Help—7. Shell molding in the foundry industry offers "no normal cost saving" over conventional sand casting but saves by eliminating machining and gives a good-as-cast finish.

Most Advanced—8. Cold extrusion "is the most advanced method we have for production of projectiles," the general says. No operating details of extrusion practice are now being given out, although four contractors are using the method. The technique results in large steel savings and reportedly gives a more uniform and better shell than those formed from conventional forging and machining.

The Germans used it in a limited way for small artillery cartridge cases; so far Ordnance has not made this application. Only because of shortage of presses and lack of time to transfer knowledge to new contractors has the number of contractors been kept small. "It is not lack of confidence in the process," the general declared. He believes cold extrusion will have many commercial applications and has encouraged private concerns to experiment with it.

Armco Licenses Allegheny

Armco Steel Corp. has licensed Allegheny Ludlum Steel Corp. to use the Armco patents covering processes for the production of special types of electrical alloy steel sheets.

Chrysler Hits Road To Find Suppliers

It already has 1200 subcontracts helping it with defense jobs but needs 2000 more. Here's the data they want from prospective suppliers

CHRYSLER CORP. is looking for 2000 more suppliers to help it with the defense assignments now on its books. It already has enlisted some 1200 individual subcontractors of all sizes.

It has taken part in defense procurement clinics in Atlanta and Boston and this week is participating in two more, at Ft. Worth and Minneapolis.

The program at Ft. Worth will seek to enlist suppliers for Chrysler's tank engine project in New Orleans, for which about 1000 subcontractors will be required. Purchasing agents at the Minneapolis affair will represent the Delaware tank plant, Chrysler's Dayton, O., Airtemp range finder project and a jet aircraft engine project. In Ft. Worth the clinic will be at the Will Rogers Memorial Colosseum; in Minneapolis, at the Hotel Radisson.

What To Do—Here's what J. Pfeiffer, Chrysler director of purchases, says you should do if you are seeking defense work from another manufacturer:

1. Make an analysis of your facilities. Is your regular commercial product suitable, with possibly some minor adjustments, to the defense effort or must you make an entirely new product?

2. If your commercial product is not suitable to defense, the next step is to analyze your equipment and processes. While your regular product may not be suitable, the processes you use in making it may be adapted to a wide field of defense work.

3. Decide what you want to make for defense and seek out the defense producers who can use the item.

4. Use the same selling effort that you do for your civilian product. You must let the defense contractor know what you can make for him and convince him that you can produce the item on schedule, in the volume required, to the required specifications and at a fair and reasonable cost.

5. When you do receive an order, make a point to learn how your customer expects you to function. That includes such activities as tooling, submitting production samples, initial and subsequent deliveries and the manner in which engineering changes are processed.

What Chrysler Wants—In considering new suppliers, Chrysler looks for this information:

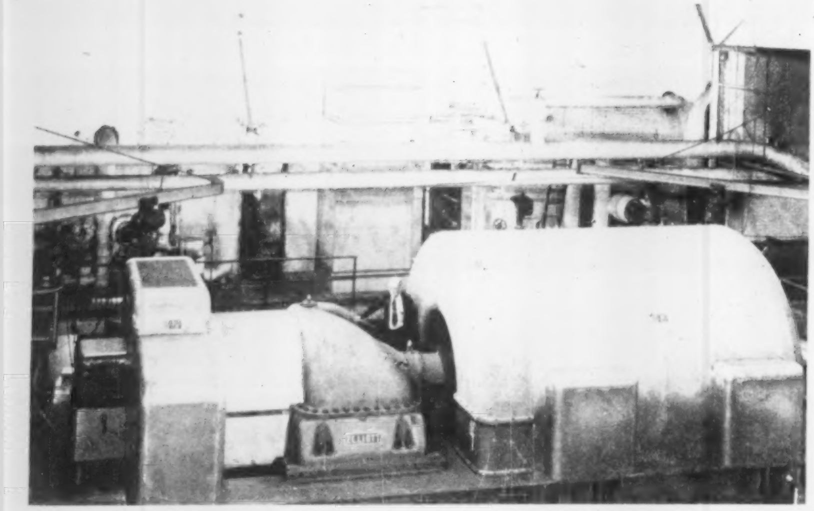
Vendor's name and address; regular civilian products manufactured; listing of major customers; World War II products manufactured and customers; defense product vendor proposes to make; plant data; details on equipment; transportation facilities; personnel data, including names of company officials, the plant supervisor and the number of employees; engineering and tool room facilities; latest financial statement.

CLOUD CLEAVER: A boost in speed and flying stability are gained by using a center-mounted wing tank with horizontal tail fin on Lockheed's F-94 all-weather jet interceptor. In foreground is suspended type tank previously used. The F-94 is powered by an Allison J-33 turbojet engine rated at 5200 pounds dry static thrust plus afterburning. It can fly and fight in pitch darkness in extreme weather

North American at 45,000 Mark

North American Aviation Inc., Inglewood, Calif., is past the 45,000 mark in deliveries of military planes to the Air Force. Plane number 45,000 was the new F-86E Sabre jet fighter.

In World War II, the company made 14 per cent of the planes built by the nation's aircraft companies. A backlog of $700 million includes, in addition to the F-86E, contracts for the AJ-1 Savage, Navy carrier-based attack bomber; the F-86 jet fighter; the B-45 Tornado, four-jet light bomber; and T-60 and T-28 propeller trainers.



FURNACE AIR FEEDER: One of two such units installed at U. S. Steel Co.'s Ohio Works in Youngstown is this turbine-driven blast furnace blower made by Elliott Co., Jeannette, Pa. The blower is rated 100,000 cubic feet per minute, and horsepower of the driving turbine is 11,000. Koppers Co., Pittsburgh, set a new record in rebuilding the 1100 net tons per day furnace. It was blown in 120 working days after the old furnace was blown out

Oklahoma Gets Bar Mill

Hoster Steel Corp. to start operations in August with electric furnace and bar mill

HOSTER Steel Corp. will start producing merchant steel bars in Oklahoma City, Okla., early in August. The new company is installing a 7-ton electric furnace purchased from a New York foundry and rolling mills purchased from the Richmond Rolling Mills Inc., Richmond, Va. These include a 12-inch roughing mill and a 10-inch, 3-high 4-stand finishing mill.

Capacity will be about 20,000 tons of flats, angles, rounds and squares. Market will be almost entirely in the Southwest where the steel shortage has been acute.

As raw material the mill will use scrap, of which Oklahoma produces a large surplus. The mill will employ about 100 people.

W. H. Hoster, formerly head of the Star Mfg. Co., is president of the company. Vernon F. Hoster is vice president and Arthur Powell is secretary-treasurer. Henry Krause, formerly of Kaiser Steel Co., Fontana, Calif., is rolling mill superintendent and William Brand, formerly of Northwestern Steel & Wire Co., is melting superintendent.

Steel Shipments Shift

Railroads and warehouses received the greatest tonnage increase in steel shipments in the first four months of this year, American Iron & Steel Institute reports.

In that period warehouses obtained 4,688,000 net tons of steel, an increase of 590,000 tons over the first four months of 1950. In April steel shipments of nearly 1.2 million tons to the warehouses surpassed the total shipped to the automotive industry, thus putting warehouses in first place for the first time in about two years. The amount of steel shipped to warehouses in April was 18.4 per cent of total shipments. The automotive industry got 17.4 per cent, compared with 20.5 per cent in April, 1950.

Shipments of steel to the railroads and builders of rolling stock increased 862,000 tons or 71 per cent in the first four months this year over a similar 1950 period. Total steel going to those users was 2,070,000 tons, 8 per cent of the total in four months.

Direct shipments of steel for ordnance and other military manufacture was 256,000 tons in four months or 17 times as large as a year earlier. Shipments for aircraft manufacture, though only 0.2 per cent of the total in April, have been running several times as great as a year earlier.

Total shipments of steel in four months were 26,371,000 tons, an increase of more than 19 per cent over the corresponding 1950 months.

In April, plate shipments, at 653,111 tons, continued to increase and were 9.8 per cent of the total, compared with an average 9.4 per cent for the first four months. Hot and cold-rolled sheet deliveries in April, 1,539,848 tons, showed a relative drop as they were only 23.2 per cent of total shipments, compared with an average 23.9 per cent in the first four months.

Employment Continues High

Rising defense activity and a seasonal upturn in construction in mid-May offset the effects of cutbacks in automobiles and other consumer goods on nonfarm employment, says Department of Labor's Bureau of Labor Statistics.

Factory employment showed a slight decline over the month, to 15.8 million in mid-May. Since mid-March, employment has declined by about 100,000 in metal products industries manufacturing consumer goods, including automobiles, communication equipment, cutlery, electrical appliances and jewelry. On the other hand, in response to the growing volume of defense orders employment has continued to show moderate gains in the machinery and aircraft industries.

Construction employment rose by 100,000 over the month to 2.6 million. The number of government workers increased by 85,000 between April and May.

Committee Studies Expansion

Controversy between government and industry as to how much iron and steel expansion should be undertaken has been assigned for study by a committee appointed by Charles E. Wilson, defense mobilization chief. Industry members include H. G. Batcheller, president, Allegheny Ludlum Steel Corp., and Elton Hoyt II, Pickands, Mather & Co. Industry men believe a capacity of 118 million tons of ingots annually as of July 1, 1953, will be sufficient, whereas a group in the government sees a need for 130 million tons as of that time.

Republic Buys Leased Plant

The RFC sold to Republic Steel Corp. the steel production facilities built in 1941 by the former Defense Plant Corp. to enlarge Republic's Canton, O., plant.

The facilities, with a capacity of 125,000 tons of steel ingots had previously been leased by the RFC to Republic. The sale was made at the option price of $1,534,391. At that price, plus rentals over the past ten years, the government will have gotten back the equivalent of its original investment plus 3 per cent interest and about $13,000. The facilities include eight acres of land together with the buildings and equipment for the production of billets and slabs.

Steel in the West

West Coast steel users can expect continued capacity growth, says Columbia official

WESTERN steel consumers can expect better supplies eventually because the area's steel capacity expansion will continue.

That's the prediction of Charles L. Hamman, general sales staff manager, Columbia Steel Co., a U. S. Steel Corp. subsidiary. He made his forecast in an address to a West Coast regional meeting of the Wire Association in San Francisco.

Expansion Already—The Columbia Steel executive made his prediction despite the fact the West Coast has experienced a 360 per cent expansion in the last ten years—from an annual production of 650,000 tons of finished steel products in 1940 to more than 3 million tons in 1950. A further immediate expansion is assured. Presently planned are furnaces on the West Coast that will add another 400,000 tons a year to Western ingot capacity.

Mr. Hamman said consumption will continue to grow year by year. Production will continue to expand although, he acknowledged, the West may never produce all it consumes. Presently, the West is producing around 61 per cent of what it consumes. That compares with 26 per cent ten years ago. And Mr. Hamman said he expected this percentage to "grow beyond present levels."

Growing Market—Turning to wire consumption, he said the West currently is furnishing a market for about 9 per cent of the total produced in the United States. That compares with a Western consumption of about 7 per cent of all steel production. Mr. Hamman said there has been a substantial shift in the relative importance of wire products sold in the Western area. He pointed out for instance, since 1940, the Western consumption of nails has grown 16 per cent. During the same period, the consumption of manufacturers' wire has grown 52 per cent.

The wire fabricating industry, he said, has been growing at a rapid rate. Many new products of wire, not previously made by Western mills, now are produced in volume. This has resulted in heavy demands upon the wire mills, he said.

Industries Fostered—Expanded industrialization of the West has fostered the growth of fastener manufacture, such as nuts and bolts, screws and rivets, he pointed out. The aircraft industry and automotive assembly operations account for added volume.

"In the field of domestic and commercial equipment, domestic furniture is the big wire consumer," Mr. Hamman said. "The furniture industry, although well developed before the war, has shown unusually rapid growth since the war. In 1939, furniture factories of California employed 9000 workers. Furniture makers now employ 15,000."

Pacific States Adds Furnaces

Pacific States Steel Corp. is adding a third and fourth open hearth to its plant in Niles, Calif., which will lift the company's annual capacity to between 375,000 and 400,000 tons of ingots a year.

The two new open hearths as well as the two now in operation have a 150-ton capacity each. Number three now is going into place and is expected to be completed in a few months. Number four is expected to be in place some months after that. That part of the company's expansion, including related equipment, will cost more than $1 million.

In addition to open hearths, Pacific States Steel has four electric furnaces, capable of turning out 100,000 tons of steel ingots annually. The company produces merchant bars and shapes and structural and reinforcing bars. Some steel forging quality ingots are sold to American Forge Co., which has one of the West's most modern forging plants near the Pacific Coast Steel Corp. mill.

HOME ON THE RANGE: Gabbs, Nev., is the operational site of this 400-foot single rotary kiln for manufacture of granular magnesia refractories. Basic Refractories Inc., Cleveland, built the $2.5 million plant to supply scarce lining materials for open hearths of the steel industry. The Gabbs plant is adjacent to one of the largest deposits of magnesite in the United States

High Volume for Victor

Victor Equipment Co., San Francisco, maker of welding equipment and supplies, expects its business in the first half of 1951 to be double that of the same period in 1950. The second half will be 10 or 15 per cent over the same 1950 months.

Business for the year as a whole will be 33 per cent over 1950. The volume in 1952 won't be as good as in 1951, predicts L. W. Stettner, company president. He says the major reason for the declining volume from now on will be materials shortages. Available supplies of welding rods now are less than half of demand.

Wildcat Deal May Pay Barium

Barium Steel Corp. has an agreement with Phillips Petroleum Co. whereby Barium will share in some of Phillips' exploratory oil and gas leases.

The deal was made in connection with sale of 21,000 tons of steel pipe to Phillips by the steel company—a cash transaction with the joint exploratory agreement an added incentive. A letter sent by Barium to its stockholders reports all properties, leases, geology and drilling operations will be directed by Phillips.

Hardware Show Space Tight

More than 90 per cent of available exhibit space for the National Hardware Show is already sold, says Frank Yeager, managing director. First estimates by Mr. Yeager indicate approximately 35,000 items will be on display in Grand Central Palace, Atlantic City, N. J., Oct. 8-12.

More Fast Writeoffs Granted

Electric power companies have received their first tax writeoff authorizations from the Defense Production Administration.

In its latest list of certificates of necessity, DPA announces issuance of 29 certificates to seven electric power utilities. The certificates permit a rapid amortization of 25 per cent to 75 per cent of new or expanded facilities costing more than $302 million.

The utility writeoffs were included

in a list of 171 new or expanded defense facilities granted accelerated amortization benefits in the week ended June 15. The total amount covered by the tax privileges in the latest list reaches nearly $552 million. That brought to 1937 the overall total of certificates issued. They cover more than $6.7 billion.

The largest rapid amortization privileges extended to a firm other than a utility was granted to M. A. Hanna Co., Cleveland It can write off 75 per cent of $85,750,000 worth of new or expanded facilities for the production of iron ore.

Wyman-Gordon Expands

Ground-breaking for Wyman-Gordon Co.'s new press forging installation will be June 26, at its North Grafton, Mass., plant. Construction of the new facility is under authority of the Air Materiel Command.

When completed, the expansion will include an addition to the present building, plus a new plant with more than 500,000 square feet of floor space to house production of forged material for military aircraft. Two die forging presses to be installed have capacities rated at 50,000 and 75,000 tons.

Theis Buys Electric Furnace

Theis Pump & Steel Corp. has ordered a 6-ton Whiting hydroarc electric furnace for installation at Clarksburg, W. Va., according to Elmer Theis, president. Furnace will be used for production of armor plate castings, and supply will be taken by Cadillac Motors Div., GMC, as stipulated in a letter of intent. Cost of the furnace is undetermined.

Theis Pump recently located its 52,000-square foot shop on a 3¾-acre site in Clarksburg. Theis is known as a producer of high-pressure diaphragm pumps.

Mid-Air Fueling Perfected

Republic Aviation Corp. is making its first jet fighter to be fully equipped for mid-air refueling by tanker planes. Company officials say the plane, designated F-84G, can be refueled in two and a half minutes.

Stampers Visit England

A 16-member productivity team, representing the United States stamping industry, will visit England June 27-July 28. The team includes nine representatives of stamping companies, five labor union members, one representative of the Economic Cooperation Administration which is sponsoring the mission, and Orrin B. Werntz, managing director of the Pressed Metal Institute, who will serve as secretary.

Two years ago a team representing the British stamping industry visited in this country.

Electro-Motive Builds 10,000th

General Motors President C. E. Wilson spoke at LaGrange, Ill., when GM's Electro-Motive Division finished its 10,000th diesel locomotive.

He denied statements that GM had taken improper steps to obtain steel. He pointed out that company officials had merely presented their case and that the 2600 tons were allocated to Electro-Motive suppliers, not to Electro-Motive itself. He said he was opposed to most of the controls Washington is trying to impose on the country, but he believes two should be retained. Priorities for military requirements should be preserved and some credit controls continued.

The 10,000th diesel is a 2250-horsepower unit which soon will go into the Wabash Railroad's passenger service.

STEEL's Weekly Summary of Subcontract Opportunities

AIRCRAFT parts makers still rate the best chance of getting metalworking subcontracts in the defense program. Need for these suppliers increases as big prime contractors continue to pile up backlogs of orders for the Air Force.

One of these, Beech Aircraft Co., Wichita, Kans., may make a new agreement with the Air Force which would commit the company to "substantial" production of its new twin-engine training plane. The proposed contract provides for an unnamed Canadian firm to make the same plane under license to Beech.

Meanwhile, Beech is expanding output on existing contracts and will be delivering at an annual rate of $80 million by December, 1951. New facilities will be required for the expected trainer production, since the company's Wichita plant is operating near capacity on previous awards.

In other defense contracts reported, General Fireproofing Co., Youngstown, O., says it has a multimillion dollar subcontract to build fuselage and tail parts for Republic Aviation Corp.'s F-84 Thunderjet. . .Cleveland Ordnance District gave Willys-Overland Motors Inc. the job of making 707 quarter-ton trucks for $2 million. . .Baldwin-Lima-Hamilton Corp. will establish machining facilities for tank parts in Cleveland under a $4.6 million contract.

More contracts, of interest to metalworking, are included in STEEL's weekly summary:

PRODUCT	CONTRACTOR
Radio Assemblies	Link Aviation Inc., Binghamton, N. Y.
Generator Assemblies	Jack & Heintz Precision Industries Inc., Cleveland
	Belden Mfg. Co., Chicago
	Lycoming-Spencer Div., Avco Mfg. Corp., Cincinnati
	Frazier Wright Co., Los Angeles
	Ford Instrument Co., Long Island City, N. Y.
Transformers	Utah Radio Products Co., Huntington, Ind.
	Peerless Electric Products Div., Altec Lansing Corp., Los Angeles
	Larkin Lectroproducts Corp., Pine Bluff, Ark.
Transmitters	U. S. Gage Div., American Machine & Metals Inc., Sellersville, Pa.
Amplifier Assemblies	Coast Industries Inc., New York
Motors	Kimble Motor Div., Miehle Printing Press & Mfg. Co., Bloomfield, N. J.
	Master Electric Co., Dayton, O.
Dynamotors	Electrolux Corp., Greenwich, Conn.
Dynamotor Test Sets	Universal Industries Inc., Chicago
Charger Assemblies	Walter Kidde & Co. Inc., Belleville, N. J.
Tester Assemblies	Sperry Gyroscope Corp., Great Neck, Long Island, N. Y.
	Sprague Engineering & Sales Co., Gordena, Calif.
Tachometer Assemblies	Commercial Research Laboratories Inc., Detroit
	Standard Electric Time Co., Springfield, Mass.
Converters and Chargers	Carbonic Gas Equipment Co., Norwalk, Conn.
Recorder Assemblies	Link Aviation Inc., Binghamton, N. Y.
Receivers	Cincinnati Electronics Co., Cincinnati
Relays	Hartman Electrical Mfg. Co., Mansfield, O.
Cabinet Relay Assemblies	Joseph Wiedenhoff Inc., Algina, Iowa
Guide Assemblies	Variety Aircraft Corp., Dayton, O.
Radar Training Sets	Transducer Corp., Boston
Turbosupercharger Regulators	Minneapolis-Honeywell Regulator Co., Minneapolis
Duplicating Machines	Marr Duplicator Co. Inc., New York
	A. B. Dick Co., Chicago
Trainer Assemblies	Link Aviation Inc., Binghamton, N. Y.
Engines	American Airmotive Corp., Miami Springs, Fla.
	Kindred Aviation Corp., Burbank, Calif.
Aircraft Modification Kits	Boeing Airplane Co., Seattle
Bomb Hoists	Aero Equipment Corp., Cleveland
Portable Hoists	Manley Div., American Chain & Cable Co., York, Pa.
Cranes	Reiger Equipment Co. Inc., Urichsville, O.
Truck and Bus Lifts	Weaver Mfg. Co., Springfield, Ill.
Stand Assemblies	Greer Hydraulics Inc., Brooklyn, N. Y.
	Aeronca Mfg. Corp., Middletown, O.
Bomb Rack Releases	Lackner Co., Cincinnati
Turbine Assemblies	Airesearch Mfg. Co., Los Angeles
Hydraulic Pumps	New York Air Brake Co., New York
Pumps	Economy Pumps Inc., Hamilton, O.
	Worthington Pump & Machine Corp., Harrison, N. J.
Automatic Guns	Burton-Rodgers Inc., Cincinnati

CHECKLIST ON CONTROLS

GOVERNMENT control orders are digested or listed each week in this "Checklist on Controls." For complete copies of NPA orders, write to U. S. Commerce Department, Division of Printing Services, attention E. E. Vivian, Room 6225, Commerce Bldg., Washington 25. For ESA orders, write J. L. Miller, Economic Stabilization Agency, Room H367, Temporary E Bldg., Washington 25.

Materials Orders

IRON & STEEL—Direction 1 to NPA Order M-1 postpones from July 1, 1951, to July 7, 1951, the date on which authorized controlled materials orders for September delivery of iron and steel products under the Controlled Materials Plan will have preference over defense-rated (DO) orders. The National Production Authority urged persons who have already placed DO rated orders on iron and steel producing mills to convert such orders to authorized controlled materials (ACM) orders under CMP without delay. Direction 1 stipulates that product limitations for acceptance of rated orders, contained in NPA Order M-1, beyond which producers are not required to fill rated orders, will remain in effect for August and September, 1951, production. "Rated orders" mean both DO orders and ACM orders. Direction 1 was issued June 15, 1951, and was effective that date.

DISTRIBUTORS—Direction 1 to NPA Order M-6 instructs iron and steel producers to continue providing carbon steel products to warehouses on the basis of 85 per cent of average monthly shipments during the first nine months of 1950. Direction 1 was issued June 15, 1951, and was effective that date.

MARINE MRO—NPA Order M-70, effective June 19, 1951, authorizes a new priority rating of DO-91P for ship operators, marine suppliers and ship repair yards to use during the third quarter of 1951 in procuring materials for maintenance, repair and operation of vessels in U. S. ports. Chief difference between this rating and the DO-97 used by other groups for MRO procurement is that a supplier may initiate the DO-91P to build up a specified inventory in advance of sale. A DO-97 may be extended by a supplier to replace his stock only after he has received the order from his customer. The new rating enables the supplier to have MRO items on hand when a ship arrives in port, so that shipping delays will be avoided.

ZINC—Amendment of June 15, 1951, of NPA Order M-15 deletes limitations on the use of all forms of zinc except slab zinc.

PAPER—Amendment of June 20, 1951, of NPA Order M-36 instructs manufacturers of special paperboard, used in making food containers, to set aside 5 per cent of their monthly production and producers of cardboard to reserve 10 per cent of their monthly output for government use.

NPA Regulation

PRIORITIES FOR CANADIANS — Amendment of NPA Regulation 3, effective June 15, 1951, provides that all priority orders for maintenance, repair and operating supplies originating in Canada but issued against production in the United States shall be under NPA Regulation 3. Previously such purchases by Canadians were under NPA Regulation 4, which governs MRO purchases. The change brings together in one document all of the provisions affecting persons in Canada who make priorities purchases in the U. S., for Reg. 3 is the basic document which provides for comparable control, priorities and allocations systems between Canada and the U. S.

NPA Delegation

AIRCRAFT MATERIALS — Amendment of Supplement 1 to NPA Delegation 1 authorizes the secretary of defense to reschedule, when necessary, deliveries on rated orders for all materials required in the aircraft program. Previously, authority to reschedule deliveries applied only to aluminum, magnesium and instrument bearings; other deliveries were dependent upon priority established by filing of rated orders. Amendment 1 was issued June 15, 1951, and was effective that date.

Price Regulations

GEOGRAPHICAL EXTENSION — Amendment 2 to General Overriding Regulation 10 of the Office of Price Stabilization extends to manufacturers in the territories and possessions of the United States the same permission to request an upward adjustment of ceiling prices in the event they are being forced to operate at a loss, as has already been granted manufacturers in the 48 states and the District of Columbia. Amendment 2 was issued June 13, 1951, and was effective that date.

CPR 22—Ceiling Price Regulation 22 was republished June 14, 1951, to incorporate the text of Amendments 1 through 8, inclusive.

MANUFACTURERS' PRICES — The Office of Price Stabilization amended its general manufacturers' order (CPR 22) and its machinery order (CPR 30) to clarify their language, provide new optional methods for determining materials costs, and permit unemployment insurance payments to be reflected in labor cost calculations. Coverage of CPR 30 is broadened to include several new categories of manufactured industrial goods. The amendments are No. 10 to CPR 22 and No. 4 to CPR 30, both effective June 19, 1951.

Industry Men Join NPA, OPS

Three more men from industry have joined NPA's General Industrial Equipment Division. Kent Mathias, Cincinnati Milling Machine Co., becomes a machine tool consultant. James Anderson, Ingersoll-Rand Co., handles pumps and compressors, and Ralph O. Anderson, Norton Co., abrasives.

New recruits to the Iron & Steel Section, Metal Branch, Industrial Materials & Manufactured Goods Division, Office of Price Stabilization: Charles R. Sweet, Jos. T. Ryerson & Son Inc., on steel warehouse pricing; Charles C. Small, Louisville Fire Brick Co., on refractories; and Laurance L. Hurd, Buffalo Bolt Division, Buffalo Eclipse Corp., on bolts and nuts.

Harry S. Goldstein, L. Goldstein's Sons, Philadelphia, has joined the OPS Lead, Tin & Zinc Section as price analyst.

You Have a Date with CMP

IT STARTS JULY 1

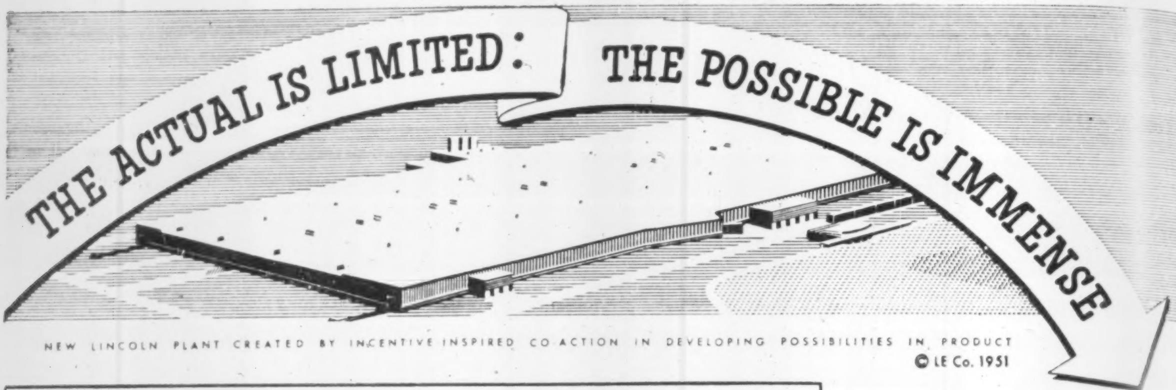
STEEL
JULY 1
CMP

Because of the problems you'll meet and the decisions you'll have to make you'll want all the help you can command. So, STEEL has compiled for you a 32-page handy reference section on the Controlled Materials Plan. You'll find it when you turn this page.

Entitled "A Guide to CMP," it tells what CMP is, how it works, gives terse summaries of each subsection of the CMP regulations as well as the official text of those regulations, provides an up-to-date digest of NPA orders that work in conjunction with CMP, and gives much other helpful information. A beauty of this guide is that it puts all of this material into one compact package.

Reprints of this guide are available through Readers' Service Department, STEEL, 1213 West Third St., Cleveland 13. Price: 50 cents a copy.

As another service to you, STEEL presents on this page (53) its weekly checklist on controls. It keeps you up to date on materials and price controls issued by the government, and should be used in conjunction with "A Guide to CMP."



NEW LINCOLN PLANT CREATED BY INCENTIVE INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT

© LE Co. 1951

SAVES 94% WITH WELDED STEEL

Machine designs that utilize the economies of welded steel are always lower in cost. As shown in the development of this typical machine part, substantial production savings are possible because:

Steel costs less per pound and fewer pounds are needed. The initial cost-saving advantage is 7 to 1 with steel, considering strength and safety factors alone.

Approaches to efficient product shape are endless. Stronger materials themselves can be more easily concentrated in the load-carrying areas, giving greater strength, more rigidity per pound of metal. Unlimited combinations of steel shapes can be utilized, enabling lower cost manufacture with a minimum of shop equipment.

Get the facts now. Your Lincoln Welding Engineer will show how your products can be fabricated with less metal and at lower cost. Simply call or write.

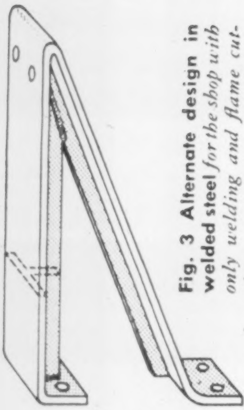


Fig. 3 Alternate design in welded steel *for the shop with only welding and flame cutting equipment weighs 35 pounds . . . costs only $4.70 . . . a saving of 48% over Figure 1.*

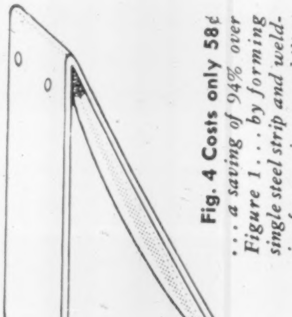


Fig. 4 Costs only 58¢ *. . . a saving of 94% over Figure 1 . . . by forming single steel strip and welding for maximum stability. Weighs only 9 pounds.*

the ACTUAL

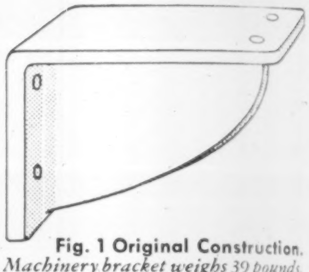


Fig. 1 Original Construction. *Machinery bracket weighs 39 pounds. Has ¼" and ⅜" sections. Requires milling and drilling. Costs $9.10.*

increasing the YIELD

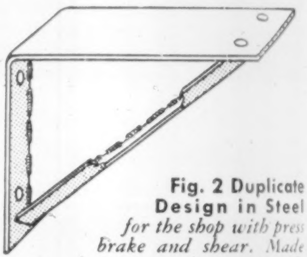


Fig. 2 Duplicate Design in Steel *for the shop with press brake and shear. Made from 8 gauge (approximately ⅛") sheet . . . saves 27 pounds of metal.* Costs $5.13 less than original construction.

the IMMENSITY of the POSSIBLE a saving of 56% in cost

PROGRESSIVE DESIGN CUTS COSTS FURTHER

Machine Design Studies available to designers and production men. Write on your letterhead to Dept. 67.

THE LINCOLN ELECTRIC COMPANY
CLEVELAND 1, OHIO

What CMP Is

WHAT is CMP? Why is it necessary? How does it work?

If you can answer those three questions fully and correctly you are well equipped to start working under the Controlled Materials Plan which goes into operation July 1, 1951.

But there are still some industry people who don't have a thorough understanding of it. This fact became apparent in the CMP clinics held in May in a score of cities by the National Production Authority. Of all the questions asked by people from industry a substantial proportion was those that came either from lack of reading of CMP regulations or lack of understanding of what was read.

In view of that and recognizing that new people will find it necessary to equip themselves with a knowledge of CMP while others will need and want to "brush up" on CMP from time to time, STEEL will first explain CMP and tell why it is necessary. That basic knowledge should help you understand how CMP works.

What CMP Is—CMP is the Controlled Materials Plan that was devised and which will be administered by the National Production Authority, an agency in the U. S. Department of Commerce. The CMP will officially go into effect July 1, 1951.

Why CMP Is Necessary—Designed to deal with the supply and production problems of a dual economy (part defense, part peace), the CMP has as its purpose the assuring of a balanced flow of essential production and construction with a minimum of interference to the civilian economy. The United States government recognizes a need to build up and maintain military defenses, but this arming, at the present time, does not require all of the nation's productive effort. And to keep dollars rolling in to pay for the arming, the government wants to see civilian production and business strong and at a high level so tax money will be readily forthcoming. Consequently, we have a dual economy.

CMP is an affirmative method for scheduling production of defense and defense-supporting items, in the light of materials supply, and for allotting the basic materials to assure completion of that production.

Better Than "Hunting License" — CMP does not give a "hunting license" (priority) for materials; it gives a certified allotment of materials. It is designed to assure the fulfillment of definite production plans by assuming availability of the necessary metals at the proper time and at the proper place. CMP doesn't tell the manufacturer what he can't do—it tells him what he can produce and what he is expected to produce.

CMP replaces a priorities system, which was put together hastily and as a temporary measure when international troubles erupted with the Korean war in mid-1950. The disadvantage of priorities is that they are only "hunting licenses." They give you a priority to buy materials—if you can find them. But the issuance of priorities without measuring them out in relation to materials available and weighing them against importance of production brings disorder and the appearance of more priorities than there are materials available.

"Cashier's Check"—While the priorities system was "holding the fort" the NPA was drafting the CMP to provide a "cashier's check" for materials available.

Under CMP, government and business each has a part to play. The basic role of the government is to establish the overall needs of the country for essential products and facilities, to balance these needs against the supply of key materials, and to authorize producers in industry to go ahead on production with a guarantee of the necessary materials.

Common Denominators—Selected as the three common denominators for balancing supply and demand are steel, copper and aluminum. Steel was selected because of the broad use of it in both civilian and military production and construction. Copper was chosen because of the importance of copper to munitions and also because of the growing importance of copper as the means of activating electrically operated devices in products of peace and war. Aluminum was selected because of its importance in the aircraft program and because of the growing demand and increasing applications for light metals.

They're the Controlling Materials — Steel, copper and aluminum are considered key materials to America's production. Control them and you control all other production. So, steel, copper and aluminum are not only the controlled materials, they are the controlling materials. They are used as a device to make sure that everybody makes what he should make and doesn't make more than he should and take too much material away from the economy.

Because we now, at least, are not in an all-out war and are trying to preserve as much of our civilian economy as possible the CMP has been designed to operate in a dual economy. But it is so tailored that it can serve, if necessary, in an all-out war.

Now, at least, CMP will be limited in its application to defense production and to a relatively few special programs for production of vitally needed defense supporting items. These applications will not require the whole supply of basic controlled materials. The remainder will be available for nondefense use.

A rough balance between supply and demand for the left-over amounts will be preserved by using other NPA power, such as "M" or limitation orders to reduce less essential civilian production and assure a proportionate amount of materials for civilian business.

Open-End Plan—Because some amounts of the controlled materials will be permitted, for the present at least, to flow free of allocations, the current CMP is sometimes referred to as an open-end plan. A plan from which no controlled materials would be permitted to flow except upon allocation would be known as a "closed" plan.

Within limits prescribed by the NPA, producers will be permitted to scramble for materials that come out of the open-end plan after defense and defense-supporting needs are filled.

How CMP Works

TO UNDERSTAND the workings of CMP, look at both sides of it—the role of the government, and the role of industry.

Government's Part—The basic role of government is to establish our overall needs for essential products and facilities, to balance these needs against the supply of key materials, and to authorize producers in industry to go ahead on production with a guarantee of the necessary materials.

The government's responsibility is divided among several government agencies like this: 1. The government determines the supply of steel, copper and aluminum, and other basic materials. Supply information is gathered and continuously reviewed by the appropriate NPA Industry Divisions.

2. The government determines the need for defense and defense-supporting production and construction. This is the responsibility of the claimant agencies, of which there are 19, such as the Defense Department, Atomic Energy Commission and NPA Industry Divisions. These needs are presented to the Program Bureau of the Defense Production Administration by the claimant agencies.

3. The government reviews requirements in the light of materials supply, balances out requirements conflicts, and authorizes production programs and makes appropriate allotments of controlled materials to the claimant agencies. This is the responsibility of the Requirements Committee of the Defense Production Administration.

4. The government receives information from industry on specific requirements for materials. Authorized production schedules and allotments of controlled materials are then issued to manufacturers and building contractors. Such authorized production and allotments are kept in line with the overall programs. This is the responsibility of the claimant agencies and the NPA Industry Divisions.

5. The government provides the additional authority (DO ratings) needed to obtain parts, components and materials, other than controlled materials, to assure programmed requirements. This, too, is the responsibility of the claimant agencies and NPA Industry Divisions.

Manufacturers' Part—Manufacturers and contractors using controlled materials have two basic parts to play in co-operation with the government to make CMP work smoothly: 1. Industry has the major responsibility for translating essential production needs into materials requirements—both controlled materials and others—and for making this information available to the appropriate government agency.

2. Industry is responsible for turning out essential production and construction, as planned and on schedule.

Points of Contact—The points of contact between industry and the government are the claimant agencies and the industry divisions of NPA. Prime consumers of controlled materials furnish requirements information to these government agencies and obtain authorized production schedules and materials allotments from them. The flow of requirements estimates and allotments is demonstrated graphically and in considerable detail in the chart on page 60.

Products Are "A" or "B"—Under CMP, products containing controlled materials are in either an "A" classification or a "B" classification. "A" products are those of special design for a special purpose, which are sold to one or a relatively few customers. Most military products, being of special design, are "A" products. The military tank and its specially designed subassemblies are examples. Auto frames, made for one company, are an example of a nonmilitary product classified as an "A" product.

"B" products are those products of general design sold to many customers. "B" products are those so listed in the Official CMP Class B Product List issued by NPA. All products containing controlled materials, not so listed, are "A" products. If a product is on the list it is a "B" product; if is isn't on the list it is an "A" product. Good examples of "B" products are standard bolts and nuts, components like ball bearings, civilian trucks, and cookstoves.

In some instances, the product which has the same listed name as a "B" product, but which is of a special design for a specific purpose, is handled as an "A" product. For instance, specially designed alloy steel bolts for aviation engines are for only one purpose.

Who Comes Under CMP—Generally speaking, the consumers who come under CMP are those "A" product producers who are given authorized production schedules by a claimant agency and asked to file applications for controlled materials, and those "B" product producers whose products are designated in the Official CMP Class B Product List as class "B"

WILLIAM C. TRUPPNER

. . . a designer of CMP

- Mr. Truppner, NPA deputy administrator for production controls, has been on the Controlled Materials Plan from the start and has had his hand in every decision made under it.

A graduate of the City College of New York in 1933, Mr. Truppner served as an economist with the U. S. Department of Commerce from 1935 to 1941. From 1941 to 1944 he served the War Production Board as assistant to the director, Production Controls Bureau; his major responsibility was development and operation of the Controlled Materials Plan.

From 1945 to 1950 he was with the U. S. Bureau of the Census, and was responsible for the conduct of the 1948 Census of Business and related programs in the distribution field.

In 1950 he joined the National Production Authority as deputy assistant administrator for production controls. His office is in Washington.

Mr. Truppner was coauthor of "Wartime Production Controls," published by Columbia University Press, 1949.

products for which production schedules will be authorized by an industry division of NPA.

"A" products and "B" products have equal priority status.

An "A" product producer gets his materials allotments from the government agency for which he is producing or from the contractor he is serving. A "B" product producer always gets his allotments from an industry division of NPA. You can see how this works by referring to the chart on page 60.

Foundations of CMP—The foundations on which CMP rests are seven regulations.

Regulation 1 defines the rights and obligations under the Controlled Materials Plan. It explains how production schedules are authorized for manufacturing operations and how materials are obtained to complete such production schedules.

Regulation 2 covers inventories. Accumulation of excessive inventories of controlled materials is forbidden.

Regulation 3 defines the preference status of delivery orders for controlled materials and delivery orders for products and materials other than controlled materials.

Regulation 4 describes how distributors make deliveries of controlled materials under CMP.

Regulation 5 explains how controlled materials and products and materials other than controlled materials are obtained for maintenance, repair and operating supplies and for minor capital additions.

Regulation 6 explains how to get materials for construction under CMP.

Regulation 7 stipulates how a repairman may buy controlled materials and products and materials other than controlled materials.

As refinements of CMP are found necessary or advisable, there will be additions or changes to the basic regulations. Already, for instance, CMP Regulation 1 has been supplemented with Directions 1 and 2. In Direction 1, manufacturers whose operations fall under the CMP but who use only small quantities of steel, copper and aluminum are provided with a simple method of obtaining needed supplies of the three basic metals, without application to the government. Direction 2 assigns a DO symbol to purchase orders for production materials other than steel, copper and aluminum placed by producers of controlled materials. The symbol they can use is DO-PM.

CMP in Operation—As an example of CMP in operation, here are the major steps that would be taken in a program for military tanks (an A product):

1. The Department of Defense needs a large quantity of a certain type tank, and negotiates a contract for its production with Company X.

2. Company X, the prime contractor (or "prime consumer" under CMP definition) determines a production schedule and requirements for controlled materials. Company X then gets the controlled materials requirements from its suppliers of "A" products. ("B" product suppliers do not figure in this CMP compilation.)

3. Company X totals up the combined requirements for the contract—both as to quantities and delivery schedules—and presents the whole picture to the procuring claimant agency.

4. The Department of Defense (the claimant agency in this case)—adds the requirements for this tank contract to its other programs and presents a total claim for controlled materials to the Program Bureau.

5. The Program Bureau of DPA examines this claim, along with those of the other claimant agencies,

weighs the combined total against the supply of controlled materials for the period ahead, and then authorizes a program and allots controlled materials to each claimant. (If combined claims exceed supply or cut too deeply into the civilian reservoir of CMP metals, claims may be cut back.)

6. The Department of Defense, now having a total allotment of controlled materials, breaks this allotment down among its many programs according to its determination of relative importance.

7. For the tank contract in question, the Department of Defense then gives Company X an authorized production schedule, an allotment of controlled materials and an allotment number, and also issues a DO rating for the procurement of "B" components and other materials (rubber, tin, etc.).

8. Then Company X (the prime consumer) passes along the allotment and the DO rating to its suppliers of "A" components so they can obtain needed controlled materials and "B" products to meet production schedules. If Company X also happens to manufacture a "B" component of the tank in its own plant, it makes separate application for an allotment of controlled materials to the appropriate NPA Industry Division.

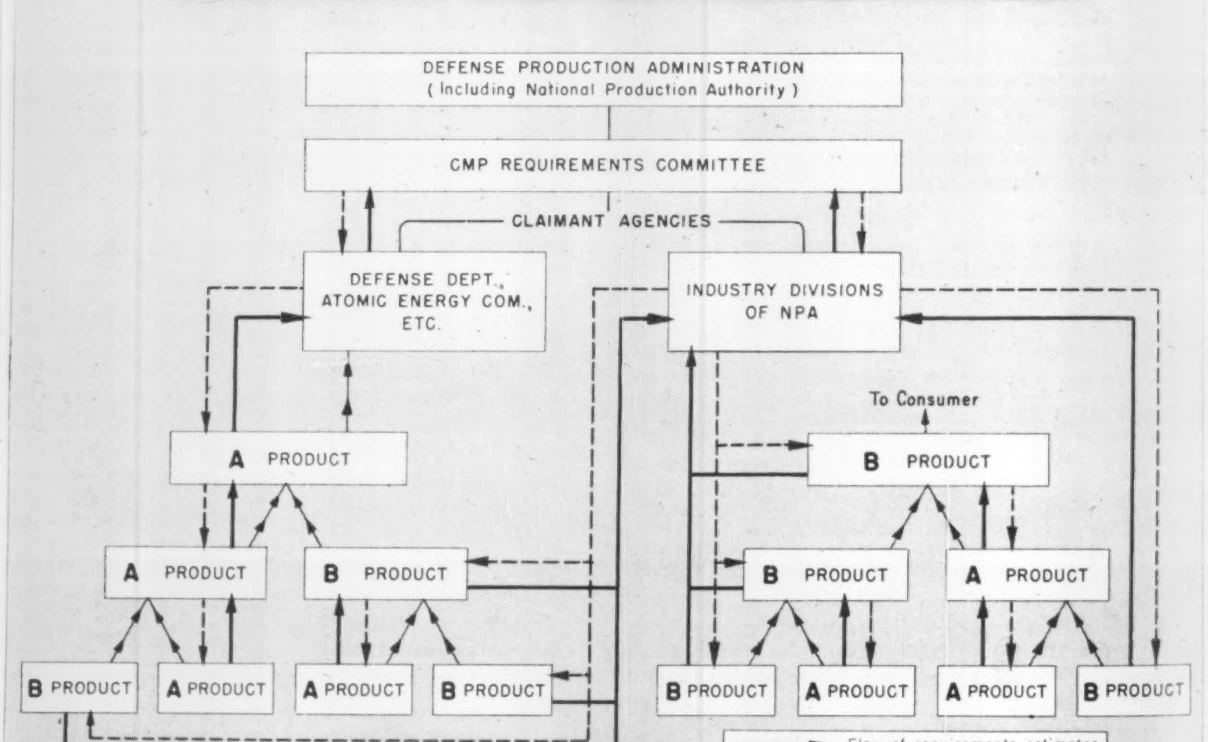
Only One Customer—The military tank maker, who is building tanks for the Defense Department, has only one customer—the Defense Department. That customer can give him his allotment of steel, copper and aluminum to make that schedule of tanks. The tank maker can pass the necessary portions of that allotment down to his subcontractors who are going to make special products for him only.

"B" Product Program—But the customer situation is different with the producer of "B" products. Since "B" products are those of general design they are sold to many customers. It would not be feasible for producers of them to receive allotments from each customer.

Consequently, authorized programs for "B" products and controlled materials allotments for "B" products are assigned to an appropriate industry division of NPA. These divisions issue production scheduling allotments and DO ratings to "B" products manufacturers. Thus, the manufacturer who cannot go to all of his customers to get allotments goes to the appropriate industry division.

If a "B" product producer needs a specially designed part for his product that special part would be considered an "A" product. The maker of that "A" product would get his allotment of material from the "B" product producer. But if a "B" product producer needs a "B" product the producer of the latter would get his allotment of materials from an appropriate industry division of NPA. For a graphic illustration of how this works, see the chart below.

How CMP Works for "A" and "B" Products


DEFENSE PRODUCTION ADMINISTRATION
(Including National Production Authority)
CMP REQUIREMENTS COMMITTEE
CLAIMANT AGENCIES
DEFENSE DEPT., ATOMIC ENERGY COM., ETC.
INDUSTRY DIVISIONS OF NPA
To Consumer
A PRODUCT
B PRODUCT
A PRODUCT
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B PRODUCT
Flow of requirements estimates
Flow of allotments
Flow of products

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CMP Regulations

THERE'LL BE many occasions when you'll have to refer to CMP regulations. STEEL has put all of them that had been issued by press time into one package for you. The regulations are printed verbatim from official government releases. And to make it easy for you to find the section or subsection that will answer your question and to tell you quickly the meaning of a subsection, STEEL's editors have written brief summaries that appear in boldface type at the beginning of each subsection.

CMP Regulation 1

CMP Regulation 1 defines rights and obligations under the Controlled Materials Plan and explains how production schedules will be authorized for defense and defense-supporting manufacturing operations and how controlled materials (steel, copper and aluminum) will be allotted for completion of authorized production.

Reg. 1 defines rights and obligations under CMP.

SEC. 1. The purpose of this regulation is to define rights and obligations under the Controlled Materials Plan. It explains how production schedules are authorized for manufacturing operations and how materials are obtained to complete such production schedules. This regulation and other CMP regulations to be issued from time to time make effective the "Controlled Materials Plan," a general description of which was issued by the National Production Authority, for informational purposes only, on Apr. 13, 1951. In case of any inconsistency between such announcement, or any other descriptive literature which may be issued from time to time, and any CMP regulation, the provisions of the latter shall govern. Other CMP regulations cover, or will cover, inventory controls; preference status of delivery orders; deliveries of controlled materials by distributors; maintenance, repair, and operating supplies; construction; and additional matters. This regulation will also be supplemented from time to time by the issuance of procedures, forms, interpretations, directions, and instructions.

* * *

Definitions for use in all CMP regulations.

SEC. 2. As used in this regulation and any other CMP regulation (unless otherwise indicated):

(a) "Person" means any individual, corporation, partnership, association, or any other organized group of persons, and includes any agency of the United States or any other government.

(b) "NPA" means the National Production Authority.

(c) "Controlled material" means steel, copper, and aluminum, in the forms and shapes indicated in Schedule I of this regulation.

(d) "Controlled Materials Division" means the Iron and Steel Division, the Copper Division, or the Aluminum and Magnesium Division of NPA.

(e) "Industry Division" means the Division or other unit of NPA which is charged with supervision over the operations of the producers of particular products.

(f) "Claimant Agency" means any Government agency or subdivision thereof designated as such by the Defense Production Administration.

(g) "Prime consumer" means any person who receives an allotment of controlled material from a Claimant Agency or an Industry Division.

(h) "Secondary consumer" means any person who receives an allotment of controlled material from a person other than a Claimant Agency or an Industry Division.

(i) "Allotment" means (1) an authorization by the Requirements Committee of the Defense Production Administration, of the amount of controlled materials which a Claimant Agency may receive and/or allot during a specified period, or (2) an authorization by the Requirements Committee of the Defense Production Administration, of the amount of controlled materials which an Industry Division may allot during a specified period, or (3) an authorization by a Claimant Agency or an Industry Division, of the amount of controlled materials which may be received and/or allotted by one of its prime consumers during a specified period, or (4) an authorization by a prime or secondary consumer, of the amount of controlled materials which may be received and/or allotted by one of its secondary consumers during a specified period.

(j) "Class A product" means any product which is not a class B product (as defined in paragraph (k) of this section), and which contains any controlled material, fabricated or assembled beyond the forms and shapes specified in Schedule I of this regulation, other than any controlled material which may be contained in class B products incorporated in it.

(k) "Class B product" means any product designated as such in the "Official CMP Class B Product List" issued by NPA, as the same may be modified from time to time.

(l) "Program" means a statement of the amounts of an item or class of items to be provided in specified periods of time.

(m) "Authorized program" means a program specifically approved by the Requirements Committee of the Defense Production Administration.

(n) "Production schedule" means a statement of the amounts of an item or class of items to be produced by an individual consumer in specified periods of time.

(o) "Authorized production schedule" means a production schedule specifically approved by a Claimant Agency or by an Industry Division with respect to a prime consumer, or specifically approved by a prime or secondary consumer with respect to a secondary consumer.

(p) "Delivery order" means any purchase order, contract, shipping, or other instruction calling for delivery of any material or product on a particular date or dates or within specified periods of time.

(q) "Authorized controlled material order" means any delivery order for any controlled material (as distinct from a product containing controlled material) which is placed pursuant to an allotment as provided in section 19 of this regulation or which is specifically designated to be such an order by any regulation or order of NPA.

* * *

Production schedules: How they are authorized.

SEC. 3. (a) Each Claimant Agency or Industry Division shall authorize production schedules of prime consumers pursuant to authorized programs. Each prime consumer who has an authorized production schedule shall, pursuant thereto, authorize production schedules of secondary consumers producing class A products for it; and each secondary consumer who has an authorized production schedule shall, pursuant thereto, authorize production schedules of secondary consumers producing class A products for it.

Allotments of materials: How allotments are made.

(b) Each Claimant Agency or Industry Division shall make allotments to prime consumers, for the purpose of fulfilling related authorized production schedules, pursuant to allotments which it has received. Each prime consumer who has received an allotment shall, pursuant thereto, make allotments to secondary consumers producing class A products for it, to fulfill related authorized production schedules; and each secondary consumer who has received an allotment shall, pursuant thereto, make allotments to secondary consumers producing class A products for it, to fulfill related authorized production schedules.

Don't produce more than you are permitted to.

(c) No person who has received an authorized production schedule shall produce more than the quantity of the particular product or products provided for in such authorized production schedule, except where expressly permitted, and to the extent and under the conditions specified, by any other regulation or order of NPA.

You don't have to be under CMP to produce, but you must not violate any NPA rules and regulations.

(d) Nothing in this regulation shall be interpreted to prohibit the production of any product by a person who does not have an authorized production schedule for such products: *Provided, however*, That such production must comply with the provisions and limitations of all applicable regulations and orders of NPA.

* * *

Here's the basis for an allotment to a consumer.

SEC. 4. (a) The basis for an allotment to a consumer shall be his actual requirements for controlled materials in connection with the fulfillment of an authorized production schedule, after taking inventories into account to the extent required by CMP Regulation No. 2. A statement of requirements is to be furnished only when requested. Such statement is ordinarily submitted as an application for allotment or a bill of materials.

An application for allotment includes these:

(b) An application for allotment includes only (1) the quantities of controlled materials required by the submitting consumer for his own production, and (2) the quantities of controlled materials required by his secondary consumers supplying class A products to him for incorporation in his product.

Bill of materials: What it is.

(c) A bill of materials is a statement of the total amounts of materials (including controlled materials) required for physical incorporation in one unit or a specified number of units of a given product.

If you overstate your materials requirements, here's what you must do.

(d) When a consumer who has furnished a bill of materials or other statement of requirements ascertains that he has substantially overstated his requirements or those of his secondary consumers for any material or product, he shall report such error immediately to the person to whom the statement of requirements was furnished.

Overstated requirements of materials must be corrected.

(c) If any consumer receives any statement of requirements which he knows or has reason to believe to be substantially excessive, with respect to controlled materials, he shall withhold any allotment based thereon in an amount sufficient to correct such excess and shall report the facts immediately to the appropriate Claimant Agency or Industry Division.

* * *

Forms CMP-4A and CMP-4B are bases for authorizing production schedules and making allotments.

SEC. 5. (a) Production schedules may be authorized and related allotments made on the basis of information furnished by applications on Form CMP-4A and Form CMP-4B.

Form CMP-4A must be filled out by producers of class A products.

(b) Any producer of class A products, upon the request of a Claimant Agency or of a consumer for whom he produces class A products, shall furnish to such Claimant Agency or consumer, the information called for in Form CMP-4A. Such information shall be submitted on Form CMP-4A or in such other manner as may be prescribed.

Form CMP-4B must be filled out by producers of class B products.

(c) Any producer of class B products which are designated as class B products for which Form CMP-4B applications are required, in the "Official CMP Class B Product List" issued by NPA, as the same may be modified from time to time, shall furnish the information called for in Form CMP-4B by submitting such form to the appropriate Industry Division or Claimant Agency (as indicated in such list). NPA may request any producer of a class B product not so designated to furnish such information on such form.

Producers of controlled materials may apply for allotments of production materials.

(d) Any producer of controlled materials may apply for an allotment as provided in section 21 of this regulation.

* * *

AUTHORIZED PRODUCTION SCHEDULES ARE DEALT WITH IN SECTIONS 6, 7, 8 AND 9

Prime producer of class A product gets authorized production schedule from government claimant agency.

SEC. 6. (a) A production schedule for each prime consumer producing a class A product pursuant to an authorized program will be authorized by the appropriate Claimant Agency on such form as may be prescribed. A Claimant Agency may, in particular cases, authorize a production schedule through an Industry Division.

Secondary producer of class A product gets authorized production schedule from person for whom he is to produce.

(b) A production schedule for each secondary consumer producing a class A product shall be authorized by the consumer for whom such class A product is to be produced, pursuant to an authorized production schedule, on such form as may be prescribed. A consumer having several authorized production schedules bearing the same allotment number may, pursuant thereto, authorize a single production schedule for a secondary consumer.

Producer of class B products gets authorized production schedule from an NPA industry division or government claimant agency.

(c) A production schedule for each consumer producing a class B product pursuant to an authorized program will be authorized by the appropriate Industry Division or Claimant Agency on such form as may be prescribed.

Separate authorized production schedules may be needed.

(d) A consumer receiving allotments from several persons shall obtain separate authorized production schedules from each.

If you authorize a production schedule you must make an allotment. If you make an allotment you must authorize a production schedule.

(e) Except where otherwise specifically provided by NPA, no person shall authorize a production schedule unless at the same time he makes an allotment as provided in section 10 of this regulation, and no person shall make an allotment unless at the same time he authorizes a related production schedule as provided in this section.

DO rating must be assigned to an authorized production schedule.

(f) When the production schedule of a consumer is authorized and a related allotment is made to him, a DO rating shall be assigned or applied to such schedule by the person authorizing the production schedule, for use in accordance with the provisions of CMP Regulation No. 3.

* * *

What to do if authorized production schedules conflict with one another.

SEC. 7. In any case where, for any reason, a manufacturer of class A or class B products is unable to fulfill conflicting authorized production schedules which he has accepted from different persons, he shall, if the conflict involves, only schedules relating to a single Claimant Agency, report immediately to that Claimant Agency for instructions. In all other cases involving conflicting authorized production schedules he shall report immediately to the appropriate Industry Division or Industry Divisions for instructions.

* * *

Reject an authorized production schedule if you can't make delivery on time.

If you can't get anyone to take your order, notify government claimant agency or industry division.

SEC. 8. A prime or secondary consumer shall reject an authorized production schedule for a class A or class B product to be manufactured by him which calls for delivery or deliveries after June 30, 1951, if he does not expect to be able to fulfill the same by the specified delivery date or dates. If the person whose order is rejected is unable to find another manufacturer who will accept it, he shall report the facts to the appropriate Claimant Agency or Industry Division. NPA may from time to time issue directives requiring individual manufacturers to reschedule or rearrange their production and/or delivery schedules.

* * *

If you are prevented from fulfilling an authorized production schedule you must promptly notify the person from whom you received it.

SEC. 9 (a) Each consumer who has accepted an authorized production schedule shall fulfill the same unless prevented by circumstances beyond his control. In the event he cannot fulfill such schedule on the specified delivery date or dates, he shall promptly notify the person from whom he received it stating the reasons therefor.

JOHN F. SKILLMAN

. . . sees that you know about CMP

• One of the industry men called back to Washington to help administer the Controlled Materials Plan is Mr. Skillman. He is director of the education, inquiry and procedures division of CMP.

For 16 years he was with Republic Steel Corp. in engineering and sales, ending in 1942 as Detroit branch manager. From 1942 through 1945 he was with the War Production Board as executive assistant to the operations vice chairman, in charge of WPB controls and the decontrol system used at the end of World War II. From 1946 through 1950 Mr. Skillman was division manager with Owens-Corning Fiberglas Corp., Toledo, O., in charge of development and sale of glass in the transportation industry and in plastics.

In 1951 he joined the National Security Resources Board and National Production Authority, studying the Controlled Materials Plan for use in the present emergency.

Mr. Skillman was born in Cincinnati in 1904, and was graduated in 1926 from Case Institute of Technology, Cleveland, with the degree of bachelor of science in metallurgy.

Three ways in which you can deviate from an authorized production schedule.

(b) No consumer who has accepted an authorized production schedule shall exceed such schedule in any quarter with the use of the related allotment and DO rating, except that (1) an authorized production schedule may be exceeded in any quarter to the extent necessary to make up for a failure to meet such schedule in any prior quarter, (2) production authorized for any quarter may be completed at any time after the fifteenth of the month preceding such quarter and, (3) where a delivery order calls for deliveries, in successive months, of class A products in quantities which are less than the minimum practicable production quantity, and compliance with monthly delivery dates would result in substantial interruption of production and consequent interference with production to fill other delivery orders, the consumer may produce (and his customer may order and accept) in the first or a subsequent month the minimum practicable quantity which may be made without such interference.

ALLOTMENTS AND DELIVERY ORDERS FOR CONTROLLED MATERIALS

Allotments of controlled materials must accompany authorized production schedule.

SEC. 10. (a) Each Claimant Agency, Industry Division, or consumer authorizing a production schedule as provided in section 6 of this regulation shall concurrently make a related allotment, pursuant to allotments which it has received, to the consumer whose production schedule has been authorized, on such form as may be prescribed.

Only general terms are to be used in designating controlled materials in allotments.

(b) The allotment shall specify the quantities and the kinds of controlled materials needed for delivery in specified calendar quarters to complete the related authorized production schedule. Allotments should be made in terms of (1) carbon steel (including wrought iron), (2) alloy steel (except stainless steel), (3) stainless steel; (4) copper and copper-base alloy brass mill products, (5) copper wire mill products, (6) copper and copper-base alloy foundry products and powder, and (7) aluminum, in each case without further breakdown.

Allotments must be identified by allotment number.

(c) The allotment shall be identified by an allotment number as provided in section 11 of this regulation.

Advance allotment may be made. But don't pass one on until you receive one.

(d) Advance allotments by Claimant Agencies or Industry Divisions to prime consumers may be made within such limits as may be specified by the Requirements Committee of the Defense Production Administration. Prime consumers receiving such advance allotments shall, in turn, make advance allotments to their secondary consumers, and secondary consumers shall make advance allotments, in the same manner as in the case of regular allotments, but no consumer shall make an allotment before receiving his own allotment.

You can pass on an allotment only in the kinds of controlled materials for which you have received an allotment.

(e) A Claimant Agency, Industry Division, or consumer may make allotments only in the same kinds of controlled materials in which it has received its allotment.

—o—

What an allotment number consists of.

SEC. 11 (a) Allotments shall be identified by an allotment number consisting of a Claimant Agency letter symbol and one digit designating the authorized program of such Claimant Agency. In cases where a Claimant Agency is not involved, the appropriate symbol designated by any NPA regulation or order as a CMP allotment symbol shall be used. For example, in the case of maintenance, repair and operating supplies, the symbol MRO shall be used as provided in CMP Regulation No. 5.

How to use allotment numbers and dates on authorized controlled materials orders.

(b) Authorized controlled materials orders shall show the related allotment number and the calendar quarter for which the allotment is valid. For example, a delivery order for controlled materials placed pursuant to an allotment identified by allotment number K-2 which is valid for the fourth quarter of 1951 shall be designated as follows: K-2-4Q51. The date or dates on which delivery is required must also be specified on such delivery order.

How to mark orders for materials other than controlled materials.

(c) Delivery orders for products and materials other than controlled materials required

SCHEDULE I—CONTROLLED MATERIALS

(See sections 2 (c) and 2 (j) of CMP Reg. 1)

CARBON STEEL
(Including Wrought Iron)[1]

(a) Bar (including bar shapes).
  Includes:
    Bar, hot-rolled projectile and shell quality.
    Bar, hot-rolled, other (including light shapes).
    Bar, reinforcing.
    Bar, cold-finished.
    Bar, tool steel.
(b) Sheet, strip (uncoated and coated).
  Includes:
    Sheet, hot-rolled.
    Sheet, cold-rolled.
    Sheet, galvanized.
    Sheet, all other coated.
    Sheet, enameling.
    Strip, hot-rolled.
    Strip, cold-rolled.
    Strip, galvanized.
    Electrical sheet and strip.
    Tin mill black plate.
    Tin plate, hot-dipped.
    Ternes, special coated manufacturing.
    Tin plate, electrolytic.
(c) Plate.
(d) Structural shapes (heavy), piling.
(e) Pipe, tubing.
  Includes:
    Standard pipe (including couplings).
    Oil-country goods (casings, tubular goods, couplings furnished by mill).
    Line pipe.
    Pressure tubing—seamless and welded.
    Mechanical tubing—seamless and welded.
(f) Wire, wire products.
  Includes:
    Nails and staples.
    Barbed and twisted wire.
    Woven wire fence.
    Bale ties.
(g) Other mill forms and products (do not include forgings).
  Includes:
    Ingots.
    Billets, projectile and shell quality.
    Blooms, slabs, other billets, tube rounds, sheet bars.
    Skelp.
    Wire rod.
    Rails.
    Joint bars (track).
    Tie plates (track).
    Track spikes.
    Wheels, rolled or forged (railroad).
    Axles (railroad).
(h) Castings (not including cast iron).

ALLOY STEEL[2]
(Except Stainless Steel)

(a) Bar, bar shapes.
  Includes:
    Bar, hot-rolled projectile and shell quality.
    Bar, hot-rolled, other (including light shapes).
    Bar, cold-finished.
    Bar, tool steel.
(b) Sheet, strip.
  Includes:
    Sheet, hot-rolled.
    Sheet, cold-rolled.
    Sheet, galvanized.
    Strip, hot-rolled.
    Strip, cold-rolled.
    Electrical sheet and strip.
(c) Plate.
  Includes:
    Rolled armor.
    Other.
(d) Structural shapes (heavy).
(e) Pipe, tubing.
  Includes:
    Oil-country goods.
    Pressure tubing—seamless and welded.
    Mechanical tubing — seamless and welded.
(f) Wire.
(g) Other mill forms and products (do not include forgings).
  Includes:
    Ingots.
    Billets, projectile and shell quality.
    Blooms, slabs, other billets, tube rounds, sheet bars.
    Wire rods.
    Rails.
    Wheels, rolled or forged (railroad).
    Axles (railroad).
(h) Castings.

STAINLESS STEEL[3]

(a) Seamless tubing.
(b) Other mill forms and products (do not include forgings).
  Includes:
    Bar, bar shapes.
      Includes:
        Bar, hot-rolled (including light shapes).
        Bar, cold-finished.
    Sheet, strip.
      Includes:
        Sheet, hot-rolled.
        Sheet, cold-rolled.
        Strip, hot-rolled.
        Strip, cold-rolled.
    Plate.
    Structural shapes (heavy).
    Tubing (except seamless).
    Wire, drawn.
    Wire nails and staples.
    Ingots, blooms, billets, tube rounds, sheet bars, wire rods.
(c) Castings.

COPPER

COPPER AND COPPER-BASE ALLOY BRASS MILL PRODUCTS
Copper (unalloyed):
  (a) Bar, rod, shapes, wire (except electrical).
  (b) Sheet, strip, plate, rolls.
  (c) Pipe, tubing.
Copper-base alloy:
  (d) Bar, rod, wire, shapes.
  (e) Sheet, strip, plate, rolls.
  (f) Pipe, tubing.

COPPER WIRE MILL PRODUCTS
Includes: Wire and cable for electrical conduction only:
  Bare and tinned.
  Weatherproof.
  Magnet wire.
  Insulated building wire products.
  Paper and lead power cable.
  Paper and lead telephone cable.
  Asbestos cable.
  Portable and flexible cord and cable.
  Communication wire and cable.
  Shipboard cable.
  Automotive and aircraft wire and cable.
  Insulated power cable products.
  Signal and control cable.

COPPER AND COPPER-BASE ALLOY FOUNDRY PRODUCTS AND POWDER
Includes:
  Castings.
  Powder.

ALUMINUM

Rolled bar, rod, wire, structural shapes.
Extruded bar, rod, shapes, tubing (including drawn tubing).
Sheet, plate, foil (including strip).
Powder (atomized or flake, including paste).
Pig or ingot, granular or shot.

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[1] "Carbon steel (including wrought iron)" means any steel customarily so classified.

[2] "Alloy steel" contains any one or more of the following elements in the following amounts: Manganese, maximum of range in excess of 1.65 per cent. Silicon, maximum of range in excess of 0.60 per cent. Copper, maximum of range in excess of 0.60 per cent. Aluminum, chromium, cobalt, columbium, molybdenum, nickel, tantalum, titanium, tungsten, vanadium, zirconium, or any other alloying elements in any amount specified or known to have been added to obtain a desired alloying effect.

[3] "Stainless steel" means heat and corrosion resisting steel containing 10 per cent or more of chromium either with or without nickel, molybdenum, or other elements. Stainless clad steel is considered to be solid stainless. AISI types 501 and 502 and other alloy steel containing 4 per cent to but not including 10 per cent chromium, which previously was considered as stainless steel, should now be included as alloy steel.

SCHEDULE II—SHORT FORM OF ALLOTMENT

(See section 12 (f) of CMP Reg. 1)

Form CMP-5

Controlled material	Allotment (specify short tons or pounds)			
	... Quarter 195..	... Quarter 195..	... Quarter 195..	... Quarter 195..
Carbon steel (including wrought iron)				
Alloy steel (except stainless steel)				
Stainless steel				
Copper and copper-base alloy brass mill products				
Copper wire mill products				
Copper and copper-base alloy foundry products and powder				
Aluminum				

Allotment No. ....

....
Signature and title

Date ....

Above allotments are made for use in filling this delivery order in compliance with CMP Regulation No. 1.

for completion of an authorized production schedule shall show the DO rating and the related allotment number, for example, DO-K-2. The date or dates on which delivery is required must also be specified on such delivery order.

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Manner in which producers of class A products pass on allotments to their suppliers.

SEC. 12. (a) Each prime consumer receiving an allotment may use that portion of the allotment which he requires to obtain controlled materials as such for his authorized production schedule, and shall allot the remainder to his secondary consumers producing class A products for him to cover their requirements for controlled materials for related authorized production schedules. Allotments by secondary consumers to secondary consumers supplying them shall be made in the same fashion. A secondary consumer producing class A products for several consumers shall obtain separate allotments from each.

Consumer must not pass on more allotments than he has received.

(b) No consumer shall make any allotment in an amount which exceeds the related allotment received by him, after deducting all other allotments made by him and all orders for controlled materials placed by him pursuant to his related allotment.

No one shall make an allotment for more materials than are necessary to fill an authorized production schedule.

(c) No consumer shall make any allotment in excess of the amount required, to the best of his knowledge and belief, to fulfill the related authorized production schedule of the secondary consumer to whom the allotment is made (including the schedules of any secondary consumers supplying the latter).

Allotments for class B products shall be made only by an NPA industry division or a government claimant agency.

(d) Allotments for production of class B products shall only be made by appropriate Industry Divisions or by appropriate Claimant Agencies as specified in the "Official CMP Class B Product List," and no consumer shall accept any allotment from any other person for the production of class B products.

Purchasers of class A product must send an allotment with delivery order, except in certain instances.

(e) No consumer who has received his allotment for an authorized production schedule shall place any delivery order for any class A product required to fulfill said schedule, unless concurrently therewith, he makes an allotment to the person with whom the order is placed, in the amount required by such person to fill said order: *Provided, however,* That if he purchases a class A product from a distributor under the conditions specified in section 15 of this regulation, he need make no allotment but must deduct the appropriate amount from his own allotment balance.

Forms for use in making allotments.

(f) A consumer may make an allotment to his secondary consumer on such form (including Form CMP-5 set forth in Schedule II of this regulation) as may be prescribed for the purpose. Allotments may be made by telegraphing or telephoning the information required by the appropriate form and confirming the same with such form, within 15 days.

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How to cancel or reduce allotments.

SEC. 13. A person who has made an allotment may cancel or reduce the same by notice in writing to the person to whom it was made. A person who has received an allotment may cancel or reduce the same by making an appropriate notation thereon and notifying the person from whom he received it. In either case, if an allotment received by a person is cancelled, he must cancel all allotments which he has made, and all authorized controlled material orders which he has placed, on the basis of the allotment; and, if an allotment received by a person is reduced, he must cancel or reduce allotments which he has made, or authorized controlled material orders which he has placed, to the extent that the same exceed his allotment as reduced. If and to the extent that cancellation or reduction is impracticable because of shipments already made to him pursuant to such allotment, he may use or dispose of controlled materials or class A products which he gets with such allotment in the manner provided in section 17 of this regulation.

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How to transfer allotments.

SEC. 14. (a) No consumer shall transfer or assign any allotment (as distinct from making an allotment) in any way unless: (1) delivery orders for class A products placed with him, in connection with which the allotment was made to him, have been transferred or assigned to another consumer; (2) the authorized production schedules of the respective consumers have been duly adjusted; and (3) the transfer or assignment is approved in writing by the person who made the allotment.

Transfer of allotments when a business is sold but no change is made in operations.

(b) Transfers or assignments of allotments may be made without complying with paragraph (a) of this section in connection with the transfer or assignment of a business as a going concern where the transferee continues to operate substantially the same business in the same plant. The transferee may use the allotment and ratings of transferor but the transferee must notify NPA of the details of the transaction, giving the names of the persons involved and furnishing one extra copy of such notification for each authorized production schedule that he has received.

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SPECIAL PROVISIONS REGARDING MANUFACTURERS AND DISTRIBUTORS OF CLASS A PRODUCTS

Distributor: A definition.

SEC. 15. (a) For the purposes of this section "distributor" means any person engaged in the business of buying and taking physical delivery of class A products which he does not manufacture and selling the same, for his own account, but only to the extent that he is so engaged.

Distributor doesn't bother with allotments for class A products; the manufacturer gets allotments for them as if they were class B products.

(b) A distributor may buy and sell class A products without making or receiving allotments. A manufacturer of class A products selling them to a distributor may obtain an allotment for such manufacture from the appropriate Industry Division or Claimant Agency by submitting an application on Form CMP-4B, in the same manner as if they were class B products. If the manufacturer makes physical delivery directly to a distributor's customer, the latter (unless he is also a distributor) shall make an allotment directly to the manufacturer in the same manner and subject to the same conditions as if the distributor had no part in the transaction.

How a manufacturer of class A products sold as MRO supplies gets allotments.

(c) A manufacturer of class A products who sells them for use as maintenance, repair, or operating supplies (except items purchased from him by a Claimant Agency and for which he has received an allotment) shall obtain allotments for such manufacture in the manner provided in paragraph (b) of this section. Applications pursuant to said paragraph (b) and this paragraph (c) may be combined in a single Form CMP-4B.

A manufacturer who sells purchased class A products to round out his line is considered the manufacturer of them, not a distributor.

(d) Notwithstanding paragraph (a) of this section, a manufacturer who also sells purchased class A products to round out his line, which do not represent more than 10 per cent of his estimated total sales receipts in a calendar quarter for which he files an application for allotment, shall be deemed the manufacturer of such products and not a distributor for purposes of this section.

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Allotments don't have to be passed on in chain-like fashion. A prime or secondary consumer can pass them out at one time directly to all of his suppliers.

SEC. 16. A prime or secondary consumer who has several secondary consumers in different degrees of remoteness, may at his option, authorize individual production schedplies and make simultaneous direct allotments to all such secondary consumers of all degrees of remoteness. The person who is to make the allotment under this alternative procedure (the originating consumer) may request each supplier of all degrees of remoteness to furnish him directly with information regarding such supplier's requirements for controlled materials, and each such supplier shall comply with such request. If this procedure is followed each supplier shall include in the information he furnishes to the originating consumer only his own requirements for controlled materials and not those of his suppliers. In no event shall a person who uses this alternative procedure make an allotment of more controlled materials than he has received. All the provisions of this regulation regarding authorized production schedules and allotments shall apply to the alternative procedure for simultaneous allotments, except as specifically provided in this section.

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Don't request more controlled materials than you need; don't ask delivery sooner than you need it.

But sometimes it may be legal to take more controlled materials than you need.

SEC. 17. (a) In no event shall a consumer request delivery of any controlled material in a greater amount or on an earlier date than required to fulfill his authorized production schedule, or in an amount so large or on a date so early that receipt of such amount on the requested date would result in his having an inventory of controlled materials in excess of the limitations prescribed by CMP Regulation No. 2 or by any other applicable regulation or order of NPA. If the quantity of any controlled material required by a consumer is less than the minimum mill quantity specified in Schedule IV of this regulation, and is not procurable from a distributor, he may accept delivery of the full minimum shown in such schedule.

Only for these purposes can allotments, controlled materials or class A products be used by consumers.

(b) No consumer shall use an allotment, or any controlled material or class A product obtained pursuant to an allotment for any purpose except: (1) To fulfill the related authorized production schedule, or (2) to fulfill any of his other authorized production schedules for class A products, within the same plant or operating unit, which bear the same allotment number, or (3) to fulfill any of his other authorized production schedules, within the same plant or operating unit, for class B products which are in the same Product Class Code as shown in the "Official CMP Class B Product List" issued by NPA, or (4) to replace in inventory, controlled materials or class A products used to fulfill any of such authorized production schedules, subject to the provisions of CMP Regulation No. 2 or any other applicable regulation or order of NPA. Where an allotment made for one schedule is used in filling another schedule as provided in this paragraph, no charge need be made against the allotment account of the second schedule, but an appropriate record must be made, on the allotment accounts or otherwise, describing the circumstances.

What a consumer must do if his needs for a controlled material or class A product are reduced.

(c) If a consumer's needs for a controlled material or class A product are reduced before he has ordered or received delivery of them he must immediately return the allotment as explained in section 18 of this regulation unless he uses the allotment for the purposes permitted in paragraph (b) of this section. If he has already placed authorized controlled material orders or delivery orders for class A products, he must cancel them. If cancellation of such orders is impracticable because of shipments already made, he may accept delivery of the controlled materials and class A products, in which case his use of them is covered by paragraph (d) of this section.

How to dispose of controlled materials or class A products that are surplus.

(d) If it develops, after a consumer has received delivery of controlled materials or

SCHEDULE III
TIME FOR PLACING AUTHORIZED CONTROLLED MATERIAL ORDERS

Number of days in advance of first day of month in which shipment is required
(See sections 19 (d) and 20 (f) of CMP Reg. 1)

Name of product	Carbon[1]	Low alloy[2]	Stainless[3]	Full alloy[4]
STEEL (including wrought iron):				
Ingots	45	75	75	75
Bilets, projectile and shell quality	45	75	75	75
Blooms, slabs, billets (except projectile and shell quality)	45	75	75	75
Tube rounds	45	75	75	75
Sheet bars	45	75	75	75
Skelp	45	..	..	..
Wire rods	45	75	90	75
Structural shapes (heavy)	45	[5]75	[5]150	90
Steel piling	45	..	..	..
Plates—rolled armor	..	..	..	(6)
Plates—other	45	75	90	75
Rails—standard (over 60 pounds)	45	..	..	90
Rails—all other	45	..	..	90
Joint bars (track)	45	..	..	90
Tie plates (track)	45	..	..	..
Track spikes	45	..	..	..
Wheels, rolled and forged (railroad)	45	..	..	90
Axles (railroad)	45	..	..	90
Bars—hot-rolled, projectile and shell quality (includes all projectile components such as fuzes, adapters, and base plugs)	45	75	..	[7]75
Bars—hot-rolled, other (including light shapes)	[8]45	[8]75	90	[8]75
Bars—reinforcing	45	..	..	..
Bars—cold-finished	[9]75	[8]105	105	[8]105
Bars—tool steel	[8]60	..	..	[8]90
Standard pipe (including couplings)	45	..	120	..
Oil-country goods	45	..	..	..
Line pipe	45	..	..	..
Mechanical tubing (seamless and welded)	[10]45	..	120	120
Pressure tubing (seamless and welded)	[10]45	..	120	120
Wire—drawn	[11]45	75	90	75
Wire—nails and staples	45	..	..	..
Wire—barbed and twisted	45	..	..	..
Wire—woven wire fence	45	..	..	..
Wire—bale ties	45	..	..	..
Tin mill black plate	45	..	..	..
Tin plate, hot-dipped	45	..	..	..
Ternes—special coated manufacturing	45	..	..	..
Tin plate electrolytic	45	..	..	..
Sheets—hot-rolled	45	75	90	75
Sheets—cold-rolled	45	75	105	90
Sheets—galvanized	45	75	..	..
Sheets—all other coated	45	75	..	..
Sheets—enameling	45	..	..	..
Electrical sheets and strip	(12)	..	..	..
Strip—hot-rolled	45	75	90	75
Strip—cold-rolled	45	75	105	90
Castings	[13]60	[13]90	[13]90	[13]90

COPPER AND COPPER-BASE ALLOYS:	
Brass mill copper and copper-base alloy products:	
Copper and nonrefractory alloys	45
Refractory alloys	60
Wire and cable products:	
Bare wire and cable	35
Weatherproof wire and cable	35
Magnet wire	35
Building wire	35
Paper and lead cable	60
Varnished cambric cable	40
Asbestos cable (type H-F)	60
Rubber insulated wire and cable (mold or lead cured)	60
Foundry copper and copper-base alloy products:	
Castings (rough castings, not machined—assuming patterns are available):	
Small simple castings to fit 12 by 16 inch flask	7
Large intricate and centrifugal castings	14
ALUMINUM	60

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[1] "Carbon steel (including wrought iron)" means any steel customarily so classified.

[2] "Low-alloy high-strength steel" means only the proprietary grades promoted and sold for this purpose.

[3] "Stainless steel" means heat and corrosion resisting steel containing 10 percent or more of chromium either with or without nickel, molybdenum, or other elements. Stainless clad steel is considered to be solid stainless. AISI types 501 and 502 and other alloy steel containing 4 percent to but not including 10 percent chromium, which previously was considered as stainless steel should now be included as full-alloy steel.

[4] "Full-alloy steel" means any alloy steel not classified as "stainless" or "low-alloy high-strength." "Alloy steel" contains any one or more of the following elements in the following amounts: Manganese, maximum of range in excess of 1.65 percent. Silicon, maximum of range in excess of 0.60 percent. Copper, maximum of range in excess of 0.60 percent. Aluminum, chromium, cobalt, columbium, molybdenum, nickel, tantalum, titanium, tungsten, vanadium, zirconium, or any other alloying elements in any amount specified or known to have been added to obtain a desired alloying effect.

[5] Applies to special rolled shapes including angles and channels.

[6] Subject to negotiation between mill and its customer. If no acceptable arrangements are worked out, NPA should be notified.

[7] Includes bars—rounds for piercing.

[8] If annealed or heat-treated, add an additional 15 days.

[9] If cold-finished, add an additional 15 days.

[10] If cold-drawn or cold-finished, 60 days; for welded tubing, 75 days.

[11] Wire drawn: low carbon, 11 percent; high carbon, 16 percent.

[12] For electrical sheets and strip, use this table:

Lead time	Definition
Low grade, 45	AISI M50, M43, M36.
Medium grade, 45	AISI M27, M22, M19.
High grade, 60	AISI M17, M15, M14, and oriented.

[13] Lead times apply to unmachined castings after approval of patterns for production.

SCHEDULE IV—MINIMUM MILL QUANTITIES

Minimum quantity for each size and grade of any item for mill shipment at any 1 time to any 1 destination

(See sections 17 (a), 19 (g) and 20 (d) of CMP Reg. 1)

STEEL (special grades, shapes, specifications, processes, and similar factors must be handled by negotiation):	
CARBON[1] and low-alloy[2] steel.	
Ingots, blooms, billets, slabs, and tube rounds, skelp, etc., rerolling quality	25 net tons.
Blooms, billets, and slabs, forging quality	Product of 1 ingot.
Wire rods, hot-rolled	5 net tons.
Structural shapes (heavy)	5 net tons.
Plates: Rolled armor	By negotiation.[3]
Continuous strip mill production	10 net tons.
Sheared, universal, or bar mill production	3 net tons.
Rails	5 net tons.
Track accessories (joint bars, tie plates, track spikes)	5 net tons.
Bars, hot-rolled:	
Projectile and shell quality	Product of 1 heat.[4]
Round bars up to and including 3 inches and squares, hexagons, half rounds, ovals, etc., of approximately equivalent sectional area	5 net tons.
Round and square bars over 3 inches to, but not including, 8 inches	15 net tons.
Bar size shapes (angles, tees, channels and zees under 3 inches)	5 net tons.
Bars, cold-finished	3 net tons.
Bars, tool steel	500 pounds.
Pipe, published carload minimum (mixed sizes and grades)	
Tubing: Seamless cold-drawn (O. D. in inches):	
Up to ¾ inclusive	1,000 feet.
Over ¾ to 1½ inclusive	800 feet.
Over 1½ to 3 inclusive	600 feet.
Over 3 to 6 inclusive	400 feet.
Over 6	250 feet.
Seamless hot-rolled	By negotiation.[3]
Welded	By negotiation.[3]
Wire rods. (See above.)	
Wire, drawn, for further fabrication and manufacturing:	
Low-carbon	1 net ton.
High carbon (0.40 carbon and higher):	
0.0475 inch and heavier	1 net ton.
Under 0.0475 inch to 0.021 inch inclusive	1,000 pounds.
Under 0.021 inch	500 pounds.
Wire merchant-trade products, assorted	5 net tons.
Tin mill products—any 1 gage	5,000 pounds.
Sheet, hot- and cold-rolled	5 net tons.
Strip, hot- and cold-rolled	3 net tons.
STAINLESS STEEL:[5] No minimum on standard grades and sizes. For unusual grades or sizes the minimum order is to be worked out by negotiation.[3]	
FULL-ALLOY STEEL:[6]	
Ingots	Product of 1 heat.[4]
Billet, projectile and shell quality	By negotiation.[3]
Blooms, slabs, billets (except projectile and shell quality), tube rounds, sheet bars, etc.:	
7 inches square (or equivalent cross sectional area) and under	5 net tons.
Larger than 7 inches square (or equivalent cross sectional area)	10 net tons.
Both of the above may be modified because of a mill's ingot size and/or rolling schedules.	
Wire rods	5 net tons.
Structural shapes (heavy)	By negotiation.[3]
Plates: Rolled armor	By negotiation.[3]
Other, whether rolled on continuous strip, sheared, universal or bar mill. (A steel producer need not accept an order unless the total quantity ordered is sufficient to make a heat of steel or unless ingots or slabs are available in stock or unless similar material is regularly being produced.)	
Rails	By negotiation.[3]
Wheels, rolled or forged (railroad)	By negotiation.[3]
Axles (railroad)	By negotiation.[3]
Bars, hot-rolled, projectile and shell quality	By negotiation.[3]
Bars, hot-rolled, other:	
Rounds and squares 3½ inches and smaller	5 net tons.
Rounds and squares larger than 3½ inches	By negotiation.[3]
Hexagons and flats	5 net tons.
Bars, cold-finished	3 net tons.
Bars, tool steel	500 pounds.
Oil-country goods	By negotiation.[3]
Mechanical tubing	5 net tons.
Pressure tubing	By negotiation.[3]
Sheet and strip	By negotiation.[3]
Steel Castings	(7).
COPPER AND COPPER-BASE ALLOYS:	
Brass mill products: Nickel-silver and phosphor bronze	200 pounds.
Other	500 pounds.
Wire mill products	Standard package quantities as published by each mill.
ALUMINUM:	
Sheet, plate, foil (including strip)	1,000 pounds.
Rolled rod, bar, structural shapes, wire	300 pounds.
Extruded shapes and tubing (including drawn tubing)	300 pounds.
Other forms	None.

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[1] "Carbon Steel (including wrought iron)" means steel customarily so classified.

[2] "Low-alloy high-strength steel" means only the proprietary grades promoted and sold for this purpose.

[3] "By negotiation" means negotiation between mill and its customer. If no acceptable arrangements are worked out, NPA should be notified.

[4] "1 heat" means one batch of metal made in one furnace.

[5] "Stainless steel" means heat and corrosion resisting steel containing 10 per cent or more of chromium either with or without nickel, molybdenum, or other elements. Stainless clad steel is considered to be solid stainless. AISI types 501 and 502 and other alloy steel containing 4 per cent to but not including 10 per cent chromium, which previously was considered as stainless steel, should now be included as full-alloy steel.

[6] "Full-alloy steel" means any alloy steel not classified as "stainless" or "low-alloy high-strength." "Alloy steel" contains any one or more of the following elements in the following amounts: Manganese, maximum of range in excess of 1.65 per cent; Silicon, maximum of range in excess of 0.60 per cent. Copper, maximum of range in excess of 0.60 per cent. Aluminum, chromium, cobalt, columbium, molybdenum, nickel, tantalum, titanium, tungsten, vanadium, zirconium, or any other alloying elements in any amount specified or known to have been added to obtain a desired alloying effect.

[7] 2000 pounds or less from any one pattern or mold, or a minimum production run by the producing foundry.

class A products, that he cannot use them for a purpose permitted under paragraph [illegible] of this section, he may use or dispose of them subject to restrictions of other orders or regulations of NPA.

Government agencies may step in and dictate disposition of controlled materials or class A products.

(e) If, before using or disposing of controlled materials or class A products in a way permitted by this section, the consumer receives instructions from NPA as to disposition or use of the same, he must comply with such instructions. Also, he must comply with any instructions he receives from a Claimant Agency with respect to his use of controlled materials or class A products which he obtained by use of an allotment from that Claimant Agency, in any program of the same Claimant Agency, or with respect to their sale to any other person for use in a program of the same Claimant Agency, subject always to whatever right he may have to reimbursement.

Inventories of controlled materials or class A products need not be segregated or earmarked.

(f) A consumer need not segregate inventories of controlled materials or class A products which he obtained by use of his allotments, even though different allotment numbers are used in ordering them, nor does he have to earmark them for a particular schedule. Although a consumer must charge the appropriate allotment account when placing an authorized controlled material order or making an allotment, he may keep all controlled materials and class A products received in a common inventory and in withdrawing from inventory he does not have to charge the withdrawal against the allotment account. A consumer who is operating under several authorized production schedules need not maintain separate records of the production obtained from the allotment received for each schedule if the records which he normally keeps show that his use of material for his respective schedules is substantially proportionate to the amounts of material allotted for each, and that his aggregate production of any product does not exceed the aggregate of the production schedules authorized for that product.

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Additional allotment can be requested for use in completing an authorized production schedule.

SEC. 18. (a) If a consumer's requirements for controlled materials or class A products needed to fulfill an authorized production schedule are increased after he receives his allotment, he may apply for an additional allotment to the person who made the allotment for that schedule.

Excess in an allotment must be returned.

(b) If a consumer finds that he has been allotted substantially more than he needs, he must return the excess. As of the first of each month, each consumer must check up on his anticipated requirements for the quarter and determine whether he has been allotted more than he anticipates he needs. If he has, he must return the excess by the tenth of the month. He need not take a physical inventory for this purpose, but must merely check up on the effect of known changes in his requirements or errors which he has discovered in his statement of requirements.

Unneeded allotment must be returned to person from whom it was received.

(c) The return of an unneeded allotment must be made to the person from whom the allotment was received on such form as may be prescribed. If it is impracticable to obtain the prescribed form, the return may be made by letter setting forth the facts.

In some cases unneeded allotments may be returned to government agencies.

(d) In those cases where it is impracticable for a secondary consumer to return an allotment to the person from whom he received it, he may make the return directly to the appropriate Claimant Agency, or Industry Division.

What an authorized controlled material order is.

SEC. 19. (a) A delivery order placed with a controlled materials producer or a controlled materials distributor (as defined in CMP Regulation No. 4) for controlled material shall be deemed an authorized controlled material order only if (1) it contains an allotment number and the calendar quarter for which this allotment is valid, as provided in section 11 of this regulation, and complies with the provisions of this section, or (2) it is specifically designated as an authorized controlled material order by any regulation or order of NPA.

Authorized controlled material order may be placed with any producer or distributor, unless there are directions to the contrary.

(b) A consumer who has received an allotment may place an authorized controlled material order with any controlled materials producer or distributor unless otherwise specifically directed. An allotment to a prime consumer may include an instruction to place delivery orders for controlled materials with one or more designated controlled materials producers. In such event the consumer shall use the allotment only to obtain controlled materials from the designated controlled materials producer or producers or to make allotments to secondary consumers, designating therein only producers named in the allotment received by him. Except as required by the allotment which he has received, no consumer shall impose any such restriction in any allotment made by him.

Certification must accompany every authorized controlled material order. How to make the certification.

(c) Every authorized controlled material order must contain a certification in addition to an allotment number. Unless another form of certification is specifically prescribed by an applicable order or regulation of NPA, such certification shall be in the following form: "Certified under CMP Regulation No. 1," and shall be signed manually or as provided in NPA Reg. 2. This certification shall constitute a representation to the supplier and to NPA that the purchaser is authorized to place an authorized controlled material order under the provisions of this regulation to obtain the controlled materials covered by the delivery order.

Lead times of controlled materials producers must be observed.

(d) An authorized controlled material order must be in sufficient detail to permit entry on mill schedules and must be received by the controlled materials producer at such time in advance as is specified in Schedule III of this regulation, or at such later time as the controlled materials producer may find it practicable to accept the same, provided that no controlled materials producer shall discriminate between customers in rejecting or accepting late orders.

How to convert a delivery order into an authorized controlled material order.

(e) A delivery order for controlled materials placed by a consumer before he has received his authorized production schedule and allotment, calling for delivery after June 30, 1951, may be converted into an authorized controlled material order, after receipt of such schedule and allotment, either by furnishing a revised copy of the order conforming to the requirements of this section or by furnishing in writing information clearly identifying the order and bearing the certification required by paragraph (c) of this section.

Amount of controlled material in an authorized controlled material order must not exceed the related allotment.

(f) No person shall place an authorized controlled material order unless the amount of controlled material ordered is within the related allotment received by him, after deducting all allotments made by him and all orders for controlled material placed by him pursuant to the same allotment, or unless he is expressly authorized to place such an order by any applicable regulation or order of NPA.

Precedence is given authorized controlled materials orders.

(g) Authorized controlled materials orders shall take precedence over other orders for controlled materials to the extent provided in CMP Regulation No. 3. A delivery order for controlled materials not covered by an allotment shall not be combined with an authorized controlled material order. However, such orders shall be combined if the total of both does not exceed the minimum mill quantity specified in Schedule IV of this regulation, provided that the controlled materials involved are not procurable from a distributor. Where such orders are combined, the portion covered by allotment must be specifically identified by the appropriate allotment number and such delivery order must contain the certification provided in paragraph (c) of this section.

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Producers of controlled materials must comply with NPA rules and regulations.

SEC. 20. (a) Each controlled materials producer shall comply with such production and other directives as may be issued from time to time by NPA and with the provisions of all other applicable regulations and orders of NPA regarding production and delivery of controlled materials.

Producers of controlled materials are free to accept any orders, as long as rules and regulations of NPA are not violated.

(b) Each controlled materials producer shall accept all (1) authorized controlled material orders, except as provided in this section, (2) orders for controlled materials bearing a DO rating calling for delivery before October 1, 1951, except as provided in this section, and (3) orders which he is required to accept pursuant to NPA directive: *Provided, however*, That nothing in this section shall prevent any controlled materials producer from accepting any other orders for controlled materials to the extent that such acceptance would be in conformity with the provisions of this section and all other applicable regulations and orders of NPA.

Orders for controlled materials must conform with quantity limitations and other conditions of NPA orders.

(c) A controlled materials producer shall be required to accept authorized controlled material orders, orders for controlled materials bearing a DO rating and all other orders for controlled materials only in conformity with the appropriate quantity limitations and other conditions specified in NPA Order M-1 (steel), NPA Order M-5 (aluminum), NPA Order M-6 (steel), and NPA Order M-11 (copper), or in any other applicable regulation or order of NPA.

Small orders can be rejected.

(d) A controlled materials producer may reject orders for less than the minimum mill quantities specified in Schedule IV of this regulation, but shall not discriminate between customers in rejecting or accepting such orders.

Unusual orders for controlled materials must be brought to attention of NPA.

(e) In any case where a controlled materials producer is of the opinion that the filling of an order which he is required to accept pursuant to this section would substantially reduce his over-all production owing to the large or small size of the order, unusual specifications, or otherwise, he shall notify the appropriate Controlled Materials Division setting forth the pertinent facts. NPA may direct that the order be placed with another supplier or take other appropriate action.

Green light for authorized controlled materials orders.

(f) To the extent necessary to make deliveries on time with respect to orders which he is required to accept pursuant to this section, a controlled materials producer must reject or defer any orders which he is not required to accept pursuant to this section: *Provided, however*, That if at the time the order is to be deferred it is scheduled for delivery within less time than the "lead times" specified in Schedule III of this regulation, he need not defer such order, if in so doing his production or operations would be stopped or interrupted in a way which would cause a substantial loss of total production or a substantial delay in operation.

Deliveries on authorized controlled materials orders must be made on time.

(g) A controlled materials producer shall make delivery on each authorized controlled material order as close to the requested delivery date as is practicable. He may make delivery during the 15 days prior to the requested delivery month, but not before then, provided such delivery does not interfere with delivery on other authorized controlled material orders, and provided production to meet such delivery would not violate any production directive. If a producer, after accepting an order within the limits provided in this section finds that, due to contingencies which he could not reasonably have foreseen, he is obliged to postpone the delivery date, he must promptly advise his customer of the approximate date when delivery can be scheduled and keep his customer advised of any changes in that date. Delivery of any such carry-over order must be scheduled and made in preference to any order originally scheduled for such later date. When the new date for delivery on a carry-over order falls within a later quarter than that indicated on the original order, the producer must make delivery on the basis of the original order even if that order shows that the allotment was valid for delivery in a quarter earlier than the one in which delivery is actually made.

Producer of controlled materials can deliver to self.

(h) If a controlled materials producer takes controlled materials which he has produced and processes them into a form other than a controlled materials form, or if he uses controlled materials which he has produced to make a product or a material other than a controlled material, such processing or use shall be considered a delivery for the purposes of this section.

Fitting orders into open space on order books.

(i) If a controlled materials producer is not required to or is unable to accept an authorized controlled material order for delivery in the month requested because of the provisions of this section, but has open space available in either of the two following months, he must accept and schedule the order for delivery as early as possible during the two following months and must promptly notify the customer of the proposed delivery date and tell him that the order has been accepted, subject to written confirmation within 7 days. If the customer does not have written confirmation of the new delivery date in the producer's hands within 7 days after the date on which the notice of tentative acceptance was sent, the producer may cancel the order.

Deliveries can vary from orders.

(j) If the controlled material delivered pursuant to an authorized controlled material order varies from the exact amount specified in such order, the making and acceptance of such delivery shall not be deemed a violation of this regulation by the controlled materials producer or his customer, provided such variation does not exceed the commercially recognized shipping tolerance, or allowance for excess or shortage.

Authorized order for controlled materials cannot be considered an allotment to the producer receiving the order.

(k) An authorized controlled material order shall not constitute an allotment of controlled material to the controlled materials producer with whom it is placed. If a controlled materials producer requires delivery of controlled materials from other controlled materials producers, to be processed by him and sold to his customers in another form or shape constituting a controlled material, such delivery may be made or accepted only pursuant to a specific instruction of NPA, or pursuant to allotment as provided in section 21 of this regulation.

How producers of controlled materials get materials for producing controlled materials.

SEC. 21. This section provides the procedures under which controlled materials producers may obtain production materials required in the production of controlled materials. For the purposes of this section, "production material" means, with respect to any controlled materials producer, any material (including controlled material) or product which will be physically incorporated into his product, and includes the portion of such material normally consumed or converted into scrap in the course of processing. It includes containers and packaging materials required to make delivery of the materials he produces, and also chemicals used directly in the production of the materials he produces. It does not include any items purchased by him as manufacturing equipment, or for maintenance, repair, or operating supplies as defined in CMP Regulation No. 5.

Producers of controlled materials file form CMP-4B for procurement of controlled materials or class A products.

(a) Except in those cases handled by directives pursuant to section 20 (a) of this regulation, if a controlled materials producer requires delivery, after June 30, 1951, of controlled materials or of class A products to be incorporated in a controlled material produced by him, he may apply for an allotment on Form CMP-4B or such other form as may be prescribed for the purpose. Such applications shall be sent to the Controlled Materials Division charged with supervision over the operations of the controlled materials producer, even if a different controlled material is involved.

How allotments are made to controlled materials producers.

(b) Allotments will be made to controlled materials producers applying under paragraph (a) of this section in the manner provided in section 10 of this regulation, except that in lieu of authorized production schedules, the controlled materials producer will receive from his Controlled Materials Division production instructions or authorizations. Controlled materials producers who have received allotments pursuant to this paragraph may place authorized controlled material orders in accordance with the provisions of section 19 of this regulation.

Producer of controlled materials who gets an allotment for procuring controlled materials he needs will get DO rating for materials that are not controlled.

(c) When a Controlled Materials Division has made an allotment to a controlled materials producer, a DO rating shall be assigned to the related production instructions or authorizations for use in obtaining production materials, other than controlled materials, in accordance with the provisions of CMP Regulation No. 3.

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You must comply with all NPA rules and regulations. If you can't, you must notify the appropriate government agency.

SEC. 22. Nothing in this regulation shall be construed to relieve any person from complying with all other applicable regulations and orders of NPA. In case compliance by any person with the provisions of any such regulation or order would prevent fulfillment of an authorized production schedule, he shall immediately report the matter to the appropriate Industry Division, and to the Claimant Agency whose schedule is affected. NPA will thereupon take such action as is deemed appropriate, but unless and until otherwise expressly authorized or directed by NPA, such person shall comply with the provisions of such regulation or order.

Records: What you must keep.

SEC. 23. (a) Each consumer making or receiving any allotment of controlled materials shall maintain at his regular place of business accurate records of all allotments received, of procurement pursuant to all allotments, and of the subdivision of all allotments among his direct secondary consumers. Such records shall be kept separately by allotment numbers, pursuant to section 11 of this regulation, and shall include separate entries under each number for each customer, Claimant Agency, or Industry Division from whom allotments are received under such number, except as otherwise specifically provided in this regulation.

Keep records two years.

(b) Each consumer and each controlled materials producer shall retain for at least 2 years at his regular place of business all documents on which he relies as entitling him to make or receive an allotment or to deliver or accept delivery of controlled materials or class A products, segregated and available for inspection by representatives of NPA, or Claimant Agencies authorized by NPA, or filed in such manner that they can be readily segregated and made available for such inspection.

How to keep records.

(c) The provisions of this regulation do not require any particular accounting method, provided the records maintained supply the information specified by this regulation and furnish an adequate basis for audit. Records may be retained in the form of microfilm or other photographic copies instead of the originals.

Federal law governs records.

(d) Persons subject to this regulation shall maintain such records and submit such reports to NPA as it shall require, subject to the terms of the Federal Reports Act of 1942.

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Adjustment or relief: How to request them.

SEC. 24. (a) Any person subject to any provision of this regulation, or any other regulation, order, direction or other action under the Controlled Materials Plan, may file a request for adjustment, exception, or other relief upon the ground that such provision works an undue or exceptional hardship upon him not suffered generally by others in the same trade or industry, or that its enforcement against him would not be in the interest of the national defense or in the public interest. In examining requests claiming that the public interest is prejudiced, consideration will be given to the requirements of public health and safety, civilian defense, and dislocation of labor and resulting unemployment that would impair the defense program. Each request shall be in writing submitted in triplicate, shall set forth all pertinent facts and the nature of the relief sought, and shall state the justification therefor.

An A producer can ask to be considered a B producer.

(b) A producer of class A products making a large variety of items which are sold to many customers and whose allotments originate from several Claimant Agencies, may file a request to be treated as a producer of class B products. Such request shall be in writing submitted in triplicate, shall set forth all pertinent facts, and shall state the justification therefor.

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Communications: Where to send them.

SEC. 25. All communications concerning this regulation, except as otherwise specified in this regulation, shall be addressed to the National Production Authority, Washington 25, D. C., Ref. CMP Regulation No. 1.

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Penalties for violations.

SEC. 26. Any person who wilfully violates any provision of this regulation or any other regulation or order of the National Production Authority, or who wilfully conceals a material fact or furnishes false information in the course of operation under this regulation, is guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both. In addition, administrative action may be taken against any such person to suspend his privilege of making or receiving further deliveries of materials or using facilities under priority or allocation control and to deprive him of further priorities assistance.

NOTE: All reporting and record-keeping requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

This regulation shall take effect on May 3, 1951.

NATIONAL PRODUCTION AUTHORITY,
MANLY FLEISCHMANN, *Administrator*

BURT W. ROPER
. . . *legal counsel for CMP*

- In setting up and administering government regulations such as those embodied in the Controlled Materials Plan the help of a legal adviser is a "must." Providing this help is Mr. Roper.

He was born in New York in 1913. He was graduated from the College of the City of New York in 1935 and from New York Law School in 1938.

From 1938 to 1942 Mr. Roper was associated with a New York law firm. From 1942 to 1948 he was an attorney with the U. S. Department of Commerce; during the period from 1946 to 1948 he was chief of the Commerce Department's Business Practices Division, Office of Small Business. He returned to the private practice of law between 1948 and 1950 when he was an associate in a New York law firm.

In 1950 Mr. Roper returned to the Department of Commerce where he was chief of the Business Practices Section, Small Business Division, until September of that year. Since then he has been a member of the Office of the General Counsel, National Production Authority, and is serving in Washington as legal counsel for CMP.

Mr. Roper is author of a number of publications, including "State Advertising Legislation" and "Small Business and Government Regulation."

Direction 1 to CMP Regulation 1

IN Direction 1 to CMP Regulation 1, manufacturers whose operations fall under the Controlled Materials Plan but who use only small quantities of steel, copper and aluminum in their production are provided with a simple method of obtaining needed supplies of those three metals, without application to the government.

Small consumers don't need to apply for controlled materials; they don't need allotments.

SEC. 1. This direction constitutes a determination by the National Production Authority that producers of certain class B products shall not be required to submit applications on Form CMP-4B if their total requirements of controlled materials do not exceed a certain maximum. It also establishes a procedure whereby such producers may place authorized controlled material orders for such materials without obtaining an allotment. Such producers shall be subject to all CMP regulations and orders.

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Who is exempted from filing.

SEC. 2. A producer of a class B product which is listed in the "Official CMP Class B Product List" and which is not identified by an asterisk is not required to submit an application on Form CMP-4B with respect to such product for any calendar quarter in which his total requirements of each kind of controlled material for the production of that product and all other products in the same product class do not exceed the amounts specified below:

Carbon steel (including wrought iron)	5 tons.
Alloy steel (except stainless steel)	½ ton.
Stainless steel	none.
Copper and copper-base alloy brass mill products, copper wire mill products, copper and copper-base alloy foundry products and powder	500 pounds.
Aluminum	500 pounds.

The term "product class" as used herein means a Product Class Code as shown in the "Official CMP Class B Product List."

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Allotment symbol "SU" assigned to small users for procuring controlled materials.

SEC. 3. Any producer of class B products who is not required to file a Form CMP-4B by reason of this direction is authorized to use the allotment symbol SU on delivery orders for controlled materials within the limits set forth in section 2 of this direction. An order so designated, when certified as provided in section 5 of this direction, shall constitute an authorized controlled material order. The quantity of such class B products which may be produced with controlled materials obtained with the use of the allotment symbol SU plus controlled materials properly contained in inventory shall constitute an authorized production schedule for the purpose of all CMP regulations.

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Rating of "DO-SU" is to be used by small consumers in obtaining materials other than controlled materials.

SEC. 4. Any producer of class B products who is not required to file a Form CMP-4B by reason of this direction is authorized to use the rating DO-SU on delivery orders for production materials as defined in CMP Regulation No. 3 in accordance with the provisions of that regulation.

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What certifications must be used.

SEC. 5. Every delivery order placed under the provisions hereof shall contain, in the case of an order for controlled materials, the certification required by section 19 of CMP Regulation No. 1, or, in the case of an order for production materials other than controlled materials, the certification required by section 6 of CMP Regulation No. 3.

This direction shall take effect on June 8, 1951.

NATIONAL PRODUCTION AUTHORITY,
MANLY FLEISCHMANN, *Administrator.*

Direction 2 to CMP Regulation 1

DIRECTION 2 to CMP Regulation 1 assigns a DO symbol to purchase orders for production material (other than steel, copper and aluminum) placed by producers of controlled materials.

Rating of "DO-PM" to be used by producer of controlled materials in obtaining production materials other than controlled materials.

SEC. 1. Any producer of controlled materials who requires production materials as defined in section 21 of CMP Regulation No. 1 (other than controlled materials) for use in the production of controlled materials is hereby authorized to use the rating DO-PM to obtain such production materials for delivery after June 30, 1951. Such rating shall be used and the delivery order shall be certified as provided in CMP Regulation No. 3.

This direction shall take effect on June 8, 1951.

NATIONAL PRODUCTION AUTHORITY,
MANLY FLEISCHMANN, *Administrator.*

CMP Regulation 2

CMP Regulation 2 sets limits on amounts of controlled materials (steel, copper and aluminum) a user may have in inventory.

Reg. 2 prohibits excessive inventories.

SEC. 1. The purpose of this regulation is to prevent the accumulation of excessive inventories of controlled materials. It does this by limiting the quantities of such materials that may be ordered, received, or delivered.

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Definitions:

SEC. 2. As used in this regulation:

(a) *"Item of controlled material"* means any item in any class of controlled material listed in Schedule I of CMP Regulation No. 1, which is different from all other items in that class by reason of one or more of its specifications, such as length, width, thickness, temper, alloy, or finish.

(b) *"User of controlled material"* means any person who uses any item of controlled material for production, construction, or maintenance, repair, or operating supplies.

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45-day steel supply permitted.

SEC. 3. (a) Commencing on July 1, 1951, no user of controlled material shall accept delivery of any item of steel listed in Schedule I of CMP Regulation No. 1, if his inventory of such item is, or by such receipt would become, in excess of the quantity of such item necessary to meet his deliveries, supply his services or perform his operations, on the basis of his currently scheduled method and rate of operation during the succeeding 45-day period, or in excess of a "practicable minimum work inventory" (as defined in NPA Reg. 1), whichever is less. Said 45-day limitation does not apply to persons who order structural steel for use in construction (including buildings, bridge, and other structures of a like type) and who order it delivered cut to the specifications required for a specific project, and who normally keep such steel segregated for the specific project. Instead, no such person may accept delivery of such steel more than 45 days before it is scheduled to be fabricated or, if it is not to be further fabricated, before it is scheduled to be assembled.

60-day copper and aluminum supply permitted.

(b) Commencing on July 1, 1951, no user of controlled material shall accept delivery of any item of copper or aluminum listed in Schedule I of CMP Regulation No. 1, if his inventory of such item is, or by such receipt would become, in excess of the quantity of such item necessary to meeting his deliveries, supply his services, or perform his operations, on the basis of his currently scheduled method and rate of operation during the succeeding 60-day period, or in excess of a "practicable minimum working inventory" (as defined in NPA Reg. 1), whichever is less.

Slightly processed controlled materials must be included in inventory.

(c) For the purposes of this regulation any item of controlled material in which minor changes or alterations have been effected, shall be included in inventory.

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How inventory limits can be exceeded legally.

SEC. 4. Notwithstanding the provisions of section 3 of this regulation, any person may accept delivery of any item of controlled material in excess of the prescribed inventory limits under the following circumstances:

Early deliveries are OK.

(a) If any producer of controlled material exercises his privilege under section 20 of CMP Regulation No. 1 of making delivery prior to the delivery date specified by the user of controlled material, such delivery may be accepted and the prescribed limits exceeded to the extent that such excess results from such prior delivery.

It's OK to take deliveries that couldn't be canceled.

(b) If a user of controlled material has instructed a producer or other supplier to reduce, postpone, or cancel a delivery, and the material has been shipped or loaded for shipment before receipt of such instruction, delivery of such material may be accepted and the prescribed limits exceeded to the extent that such excess results from such delivery.

Special items of controlled materials can be accepted if deliveries can't be canceled.

(c) If a user of controlled material has instructed a producer to reduce, postpone, or cancel a delivery of a special item of controlled material which the producer has already produced or has in production, or for the production of which he has acquired special materials, delivery of such special item may be accepted and the prescribed limits exceeded to the extent that such excess results from such delivery. For the purposes of this section, a special item of controlled material is one which the producer does not usually make, stock, or sell, and which he cannot readily dispose of to others.

Inventory limits can be exceeded if a full minimum mill quantity has to be accepted.

(d) If a user of controlled material would be authorized under section 3 of this regulation to accept delivery of a quantity of an item of controlled material less than the minimum shown for such item in Schedule IV of CMP Regulation No. 1, he may accept delivery of the full minimum shown in such schedule, provided that the controlled material involved is not procurable from a distributor.

Receipt of controlled material upon an NPA directive does not count against inventory.

(e) If any producer of controlled material, under a directive of NPA, makes delivery of controlled material to a person who will convert such controlled material into another form of controlled material, the person to whom such delivery was made may accept the delivery and exceed the prescribed limits to the extent that such excess results from such delivery.

Imports of a controlled material can be accepted even if they result in excess inventory, but no more domestic shipments of that material can be taken until inventory is reduced to permitted levels.

(f) If a user of controlled material imports any controlled material that he acquired prior to landing, he may accept delivery of such material and exceed the prescribed limits to the extent that such excess result from such delivery. However, if by such acceptance his inventory exceeds the prescribed limits, he may not accept further deliveries of such controlled material from domestic sources until his inventory thereof is reduced to permitted levels.

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User has responsibility of keeping inventories within permitted limits.

SEC. 5. Every user of controlled material must place orders and schedule receipts in such manner that deliveries of controlled material to him may be made without violating the provisions of this regulation. If, by reason of change in his operations, slowing or stoppage of production, delayed delivery by a controlled materials producer or other supplier, or other cause, a person who has ordered material for future delivery would, if he accepted delivery on the dates specified, exceed the limits prescribed by this regulation, he shall promptly revise and adjust his outstanding orders and scheduled receipts and, if necessary, reduce, postpone, or cancel the same, so that his acceptance of deliveries will conform to this regulation.

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Separate inventory records can be kept for each operating unit.

SEC. 6. (a) A person who has more than one operating unit may maintain separate inventory records for each such unit, and if he does, the provisions of this regulation shall apply to each such unit independently.

What to include in an inventory.

(b) In determining his inventory, a person shall include all items of controlled material in his possession and all such items held for his account by another person, but not items of controlled material held by him for the account of another person.

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Some deliveries prohibited.

SEC. 7. No person shall deliver any item of controlled material if he knows or has reason to believe that acceptance of such delivery would be in violation of this regulation.

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Excess inventories are subject to requisition.

SEC. 8. Excess in inventories of items of controlled material, including inventories of such items which are not in form usable by the holder, are subject to requisition, under appropriate circumstances, as provided in Title II of the Defense Production Act of 1950.

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You must comply with all NPA rules and regulations.

SEC. 9. Nothing in this regulation shall be construed to relieve any person from complying with all other applicable regulations and orders of NPA.

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Records must be kept.

SEC. 10. Persons subject to this regulation shall maintain such records and submit such reports to NPA as it shall require, subject to the terms of the Federal Reports Act of 1942.

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Adjustment or relief: How to request them.

SEC. 11 Any person subject to any provision of this regulation may file a request for adjustment, exception, or other relief upon the ground that such provision works an undue or exceptional hardship upon him not suffered generally by others in the same trade or industry, or that its enforcement against him would not be in the interest of the national defense or in the public interest. In examining requests claiming that the public interest is prejudiced, consideration will be given to the requirements of public health and safety, civilian defense, and dislocation of labor and resulting unemployment that would impair the defense program. Each request shall be in writing submitted in triplicate, shall set forth all pertinent facts and the nature of the relief sought, and shall state the justification therefor.

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Communications: Where to send them.

SEC. 12. All communications concerning this regulation shall be addressed to the National Production Authority, Washington 25, D. C., Ref.: CMP Regulation No. 2.

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Penalties for violators.

SEC. 13. Any person who wilfully violates any provision of this regulation or any other regulation or order of the National Production Authority, or who wilfully conceals a material fact or furnishes false information in the course of operation under this regulation, is guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both. In addition, administrative action may be taken against any such person to suspend his privilege of making or receiving further deliveries of materials or using facilities under priority or allocation control and to deprive him of further priorities assistance.

NOTE: All reporting and record-keeping requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

This regulation shall take effect on May 10, 1951.

NATIONAL PRODUCTION AUTHORITY,
MANLY FLEISCHMANN, *Administrator*.

CMP Regulation 3

CMP Regulation 3 establishes the relative preference status of delivery orders for controlled materials and other materials needed for production of goods deemed essential to the rearmament program and the general economy.

Reg. 3 outlines preference status of delivery orders for all materials.

SEC. 1. The purpose of this regulation is to define, under the Controlled Materials Plan, the preference status of delivery orders for controlled materials and delivery orders for products and materials other than controlled materials.

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Definitions:

SEC. 2. As used in this regulation and any other CMP regulation (unless otherwise indicated):

(a) *"Production material"* means, with respect to any person, any product (including fabricated parts and subassemblies) or any material (excluding controlled material) which will be physically incorporated into his product, and includes the portion of such material normally consumed or converted into scrap in the course of processing. It also includes: (1) Containers and packaging materials required to make delivery of his products, (2) chemicals used directly in the production of his products, and (3) items which he purchases for resale to round out his line, if such items do not represent more than 10 per cent of his estimated total sales receipts in a calendar quarter for which he files an application for allotment. It does not include any items purchased by him as manufacturing equipment, or for maintenance, repair, or operating supplies as defined in CMP Regulation No. 5.

(b) *"Allotment number"* or *"allotment symbol"* means an allotment number or symbol placed on a delivery order pursuant to this regulation or any other regulation or order of NPA which expressly provides for the use of such allotment number or symbol.

All delivery orders other than for controlled materials are covered by NPA Reg. 2

SEC. 3 (a) To the extent consistent with this regulation, the provisions of NPA Reg. 2 apply to all delivery orders except authorized controlled material orders.

Delivery order pursuant to an NPA directive takes precedence over any other delivery order.

(b) A delivery order pursuant to a directive issued by NPA shall take precedence over any other delivery order (including an authorized controlled material order) previously or subsequently received, unless a contrary instruction appears in the directive.

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All authorized controlled material orders are equal. They take precedence over other delivery orders for controlled material.

SEC. 4 (a) All authorized controlled material orders (as defined in section 2 (q) of CMP Regulation No. 1) shall have equal preferential status and shall take precedence over other delivery orders for controlled material previously or subsequently received.

DO ratings for controlled materials will be recognized until Oct. 1, 1951.

(b) All delivery orders for controlled material bearing DO ratings, calling for delivery before October 1, 1951, shall have equal preferential status and shall take precedence over other delivery orders for controlled material previously or subsequently received, except authorized controlled material orders.

Delivery order for controlled material may be converted into an authorized material order.

(c) A delivery order for controlled material (whether or not it bears a DO rating) calling for delivery after June 30, 1951, may be converted into an authorized controlled material order in accordance with the provisions of section 19 of CMP Regulation No. 1, except that where an allotment symbol (such as the symbol MRO provided for in CMP Regulation No. 5) is to be applied to a delivery order under this paragraph, the certification provided in the applicable regulation or order of NPA shall be used. A delivery order for controlled material calling for delivery after June 30, 1951, which has been converted into an authorized controlled material order shall be scheduled for delivery on the original delivery date, unless the person who placed such order agrees to a different delivery date.

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DO rating gives a preference to delivery orders for materials that are not classed as controlled materials.

SEC. 5 (a) All delivery orders for products or materials other than controlled materials to which both a DO rating and an allotment number or symbol have been applied, calling for delivery before October 1, 1951, shall have equal preferential status and shall take precedence over other delivery orders for products or materials other than controlled materials previously or subsequently received.

(b) All delivery orders for products or materials other than controlled materials bearing a DO rating, whether or not an allotment number or symbol has been applied, calling for delivery on or after October 1, 1951, shall have equal preferential status and shall take precedence over other delivery orders for products or materials other than controlled materials previously or subsequently received.

How to convert delivery orders for materials other than controlled materials into DO-rated orders.

(c) A delivery order for products or materials other than controlled materials (whether or not it bears a DO rating) calling for delivery after June 30, 1951, may be converted into a delivery order bearing a DO rating with an allotment number or symbol either by (1) furnishing a revised copy of the order showing a DO rating with the appropriate allotment number or symbol, or (2) furnishing information clearly identifying the order, setting forth a DO rating with the appropriate allotment number or symbol. Such delivery order or confirmation having a DO rating with an allotment number must also bear the certification provided in section 6 (d) of this regulation, and such delivery order or confirmation having a DO rating with an allotment symbol (such as the symbol MRO provided for in CMP Regulation No. 5) must also bear the certification provided in the applicable regulation or orders of NPA. A delivery order for products or materials other than controlled materials calling for delivery after June 30, 1951, which has been converted into a delivery order bearing a DO rating with an allotment number or symbol shall be scheduled for delivery on the original delivery date, unless the person who placed such order agrees to a different delivery date.

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HOW DO RATINGS AND ALLOTMENT NUMBERS ARE ASSIGNED AND USED TO OBTAIN PRODUCTS OR MATERIALS OTHER THAN CONTROLLED MATERIALS.

DO rating accompanies authorized production schedule.

SEC. 6. (a) When a production schedule of a prime consumer making class A or class B products is authorized and a related allotment is made to him by a Claimant Agency or an Industry Division, a DO rating shall be assigned to such schedule by such Claimant Agency or Industrial Division for use with the related allotment number.

DO rating must be passed on to secondary consumers.

(b) When a production schedule of a secondary consumer making class A products is authorized and a related allotment is made to him by the prime or secondary consumer for whom such products are to be made, the consumer making the allotment shall apply or extend a DO rating to such schedule for use with the related allotment number.

Limitations on use of DO ratings.

(c) A prime or secondary consumer who has received a DO rating for an authorized production schedule as provided in this section, and a controlled materials producer who has received a DO rating pursuant to section 21 of CMP Regulation No. 1, may use such rating with the related allotment number on delivery orders, only to acquire production materials in the minimum practicable amounts required, and on a date or dates no earlier than required, to fulfill such schedule, or to replace in his inventory production materials used to fulfill authorized production schedules.

Certification must accompany DO rating on a delivery order.

(d) A delivery order placed pursuant to paragraph (c) of this section must contain in addition to a DO rating with an allotment number, a certification in the following form: "Certified under CMP Regulation No. 3," which shall be signed manually or as provided in NPA Reg. 2. This certification shall constitute a representation to the supplier and to NPA that the purchaser is authorized to place an order under the provisions of this regulation to obtain the products or materials covered by the delivery order.

DO rating to be used on orders for MRO materials that are not controlled materials.

(e) A person placing a delivery order for products or materials other than controlled materials, required for maintenance, repair, or operating supplies, or for minor capital additions, pursuant to CMP Regulation No. 5, shall place thereon a DO rating with the allotment symbol MRO together with the certification provided in CMP Regulation No. 5.

If one rating duplicates another, only one of them can be used.

(f) A manufacturer of class B products who has received an authorized production schedule with a DO rating and an allotment number from an Industry Division or a Claimant Agency shall not extend any rating received by him from a customer for such production.

ARTHUR U. SUFRIN

. . . controls specialist

● A man with considerable background of government work, Mr. Sufrin helped set up the new Controlled Materials Plan. He is director of the production controls system division of CMP, and has his office in Washington.

Mr. Sufrin was born in New York City in 1904. He received a degree of bachelor of science in economics from Wharton School, University of Pennsylvania, and then attended that university's graduate school.

He was a certified public accountant in Philadelphia from 1927 to 1933. From 1933 to 1941 he was a Department of Agriculture official. Between 1941 and 1946 he was a member of the Production Requirements Plan and Controlled Materials Plan staffs of the War Production Board and assistant director of the farm machinery and equipment division, WPB. From 1946 to 1948 he was deputy director, equipment division, Civilian Production Administration. From 1948 to 1951 he was planning specialist, National Security Resources Board, specializing in agricultural machinery and production controls, including CMP.

Distributors can pass on DO ratings they receive.

(g) A person who receives a delivery order bearing a DO rating with an allotment number or symbol for any product or material (other than controlled material) which is not manufactured by him, or which is manufactured by him but for the manufacture of which he has received no authorized production schedule, may extend such DO rating to the extent permitted by NPA Reg. 2, and if he does so he shall use such allotment number or symbol and the form of certification prescribed in paragraph (d) of this section.

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Purchase requirements for materials with or without DO ratings can be combined into one order.

(h) Purchase requirements for products or materials other than controlled materials covered by a DO rating with an allotment number or symbol may be combined with those which are unrated and/or which are covered by a DO rating without an allotment number or symbol. If this procedure is followed each item covered by a rating must be specifically identified by placing the applicable rating alongside the related item, and such delivery order must contain the certification provided in paragraph (d) of this section. Such single certification shall constitute a representation to the supplier and to NPA that the purchaser is authorized to place the order under all applicable regulations and orders of NPA.

Use of allotment numbers and symbols must conform with NPA rules and regulations.

(i) No person shall place any allotment number or symbol on any delivery order for products or materials other than controlled materials, except as provided in this section or as specifically provided in any other regulation or order of NPA.

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All rules and regulations of NPA must be obeyed.

SEC. 7. Nothing in this regulation shall be construed to relieve any person from complying with all other applicable regulations and orders of NPA.

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Records must be kept.

SEC. 8. Persons subject to this regulation shall maintain such records and submit such reports to NPA as it shall require, subject to the terms of the Federal Reports Act of 1942.

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Adjustment or relief: How to request them.

SEC. 9. Any person subject to any provision of this regulation may file a request for adjustment, exception, or other relief upon the ground that such provision works an undue or exceptional hardship upon him not suffered generally by others in the same trade or industry, or that its enforcement against him would not be in the interest of the national defense or in the public interest. In examining requests claiming that the public interest is prejudiced, consideration will be given to the requirements of public health and safety, civilian defense, and dislocation of labor and resulting unemployment that would impede the defense program. Each request shall be in writing submitted in triplicate, shall set forth all pertinent facts and the nature of the relief sought, and shall state the justification therefor.

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Communications: Where to send them.

SEC. 10. All communications concerning this regulation shall be addressed to the National Production Authority, Washington 25, D. C., Ref: CMP Regulation No. 3.

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Penalties for violations.

SEC. 11. Any person who wilfully violates any provision of this regulation or any other regulation or order of the National Production Authority, or who wilfully conceals a material fact or furnishes false information in the course of operation under this regulation, is guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both. In addition, administrative action may be taken against any such person to suspend his privilege of making or receiving further deliveries of materials or using facilities under priority or allocation control and to deprive him of further priorities assistance.

NOTE: All reporting and record-keeping requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

This regulation shall take effect on May 3, 1951.

NATIONAL PRODUCTION AUTHORITY,
MANLY FLEISCHMANN,
Administrator.

CMP Regulation 4

CMP Regulation 4 establishes rules for deliveries of steel, copper and aluminum by warehouses, jobbers, dealers and retailers.

Reg. 4 prescribes rules under which distributors deliver controlled materials.

SEC. 1. The purpose of this regulation is to describe the rules under which distributors make deliveries of controlled materials under the Controlled Materials Plan. The methods by which distributors obtain controlled materials will be covered by directives or other regulations and orders of NPA.

* * *

Definitions:

SEC. 2. As used in this regulation and any other CMP regulation (unless otherwise indicated):

(a) *"Controlled material"* means steel, copper, and aluminum, in the forms and shapes indicated in Schedule I of CMP Regulation No. 1.

(b) *"Distributor"* means any person (including a warehouseman, jobber, dealer, or retailer) engaged in the business of stocking any controlled material at a location regularly maintained by him for such purpose, for sale or resale, in the form or shape as received or after performing the operations described in this paragraph, and who, in connection therewith, maintains facilities and equipment necessary to conduct such business. Such operations are cutting, shearing, burning, or torch cutting to length, size, or shape; pipe threading; sorting and grading; and the like. A person who, in connection with any sale of controlled material from his stock, bends, punches, or performs any fabricating or processing operation designed to prepare such material for final use or assembly, shall not be deemed a distributor with respect to such sale; and a person who, in connection with any purchase of controlled material for resale, does not take physical delivery of such material into his own stock at a location regularly maintained by him for such purpose, shall not be deemed a distributor with respect to such resale.

* * *

Distributors must comply with NPA directives.

SEC. 3. (a) Each distributor shall comply with such directives as may be issued from time to time by NPA.

What orders must be accepted by a distributor.

(b) Each distributor shall accept all (1) authorized controlled material orders, except as provided in section 4 of this regulation, (2) orders for controlled materials bearing a DO rating calling for delivery before October 1, 1951, except as provided in section 4 of this regulation, and (3) orders which he is required to accept pursuant to NPA directive: *Provided, however*, That nothing in this section shall prevent any distributor from accepting any other orders for controlled materials to the extent that such acceptance would be in conformity with the provisions of this regulation and all other applicable regulations and orders of NPA.

What an authorized controlled material order must bear.

(c) A delivery order for controlled material placed with a distributor shall be deemed an authorized controlled material order only if (1) it contains an allotment number, the calendar quarter for which the allotment is valid and the certification, as provided in section 19 of CMP Regulation No. 1, or (2) it is specifically designated as an authorized controlled material order by any regulation or order of NPA.

Immediate delivery to be given.

(d) A delivery order for controlled material placed with a distributor shall be considered as calling for immediate delivery unless such order specifically provides otherwise.

Oral order must be followed by written confirmation.

(e) An authorized controlled material order may be placed with a distributor orally or by telephone, provided that the person placing the order makes written confirmation of such order, conforming to the requirements of this regulation, within 15 days. If such confirmation is not received within 15 days, the distributor shall promptly notify NPA of the circumstances.

Distributor cannot consider an authorized controlled material order placed with him as an allotment to him.

(f) An authorized controlled material order shall not constitute an allotment of controlled material to the distributor with whom it is placed.

* * *

Distributors must observe quantity limitations imposed by NPA.

SEC. 4. (a) A distributor shall be required to accept authorized controlled material orders, orders for controlled materials bearing a DO rating, and all other orders for controlled materials, only in conformity with the appropriate quantity limitations and other conditions specified in NPA Order M-5 (aluminum), NPA Order M-6 (steel), and NPA Order M-11 (copper), or in any other applicable regulation or order of NPA.

Orders bearing out-of-date allotment numbers must be rejected.

(b) A distributor must reject any authorized controlled material order bearing a specific allotment number which requires a quarterly identification, after the end of the quarter for which the allotment is valid. Delivery orders bearing a symbol such as MRO which do not have to bear any quarterly identification may be filled during any quarter.

Orders not for immediate delivery can be rejected.

(c) A distributor may reject any order for controlled material which is not for immediate delivery. If he elects to accept such an order, he must not set aside or hold any material to fill it.

Distributor can reject order for material not in his stock.

(d) A distributor may reject any authorized controlled material order if he does not have the material ordered in his stock, unless he knows that such material is in transit to his stock, but shall not discriminate between customers in rejecting or accepting such orders.

* * *

You must comply with all NPA rules and regulations.

SEC. 5. Nothing in this regulation shall be construed to relieve any person from complying with all other applicable regulations and orders of NPA.

* * *

Records must be kept.

SEC. 6. Persons subject to this regulation shall maintain such records and submit such reports to NPA as it shall require, subject to the terms of the Federal Reports Act of 1942.

* * *

Adjustment or relief: How to request them.

SEC. 7. Any person subject to any provision of this regulation may file a request for adjustment, exception, or other relief upon the ground that such provision works an undue or exceptional hardship upon him not suffered generally by others in the same trade or industry, or that its enforcement against him would not be in the interest of the national defense or in the public interest. In examining requests claiming that the public interest is prejudiced, consideration will be given to the requirements of public health and safety, civilian defense, and dislocation of labor and resulting unemployment that would impair the defense program. Each request shall be in writing submitted in triplicate, shall set forth all pertinent facts and the nature of the relief sought, and shall state the justification therefor.

* * *

Communications: Where to send them.

SEC. 8. All communications concerning this regulation shall be addressed to the National Production Authority, Washington 25, D. C., Ref.: CMP Regulation No. 4.

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Penalties for violations.

SEC. 9. Any person who wilfully violates any provision of this regulation or any other regulation or order of the National Production Authority, or who wilfully conceals a material fact or furnishes false information in the course of operation under this regulation, is guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both. In addition, administrative action may be taken against any such person to suspend his privilege of making or receiving further deliveries of materials or using facilities under priority or allocation control and to deprive him of further priorities assistance.

NOTE: All reporting and record-keeping requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

This regulation shall take effect on May 10, 1951.

NATIONAL PRODUCTION AUTHORITY
MANLY FLEISCHMANN,
Administrator.

CMP Regulation 5

CMP Regulation 5 had not been issued by STEEL's presstime, but it will explain how controlled materials and products and other materials are obtained for maintenance, repair and operating supplies and for minor capital additions.

CMP Regulation 6

CMP Regulation 6 had not been issued by STEEL's presstime, but it will explain how to get materials for construction under the Controlled Materials Plan.

CMP Regulation 7

CMP Regulation 7 had not been issued by STEEL's presstime, but it will set forth the rules under which a repairman may buy controlled materials and other materials and products.

Claimant Agencies

CMP regulations speak of "claimant agencies." What are they?

They are 19 government agencies designated as "claimant agencies" by the Defense Production Administration in its Order 1 issued May 24, 1951. They are responsible to the DPA for estimating basic material requirements of the various segments of the economy during the present emergency.

The 19 agencies and the segments of the economy under their jurisdiction are:

1. Secretary of Defense.

(a) Department of Defense, including military equipment and supplies under the Mutual Defense Aid Program.

(b) Military construction and all housing on military bases and reservations.

(c) Stockpile.

(d) Military and civilian requirements of foreign areas under military administration.

(e) Program requirements of the National Advisory Committee for Aeronautics, Coast Guard and Central Intelligence Agency.

(f) Munitions List items, as defined in Presidential Proclamation 2776.

2. Secretary of the Army.

(a) Civil construction projects under jurisdiction of Department of the Army.

(b) Panama Canal.

(c) Panama Railroad.

3. Atomic Energy Commission.

4. Administrator of Federal Civil Defense Administration.

5. Administrator of Federal Security Agency.

(a) School and library construction.

(b) Hospital and health facility construction other than Veterans' Administration and military hospitals.

(c) Domestic distribution of all supplies and equipment needed in the fields of health, education, welfare, recreation, and related activities.

6. Administrator of General Services Administration.

(a) Requirements for the needs of all Federal Government agencies not covered otherwise for common-use items.

(b) Requirements for Federal Buildings not elsewhere designated.

7. Administrator of Veterans' Affairs.

(a) Hospital program of Veterans' Administration.

8. Administrator of Housing and Home Finance Agency.

(a) Housing construction, alteration and repair.

9. Secretary of Agriculture.

(a) Farm production.

(b) Farm construction.

(c) Food processing and distribution.

10. Secretary of Interior.

(a) Departmental programs.

(b) Production, preparation, processing of solid fuels.

(c) Generation, transmission, distribution of electric power.

(d) Production and processing of minerals and metals listed in column I of appendix A of NPA Delegation No. 5, by or in the respective facilities listed in column II of that appendix.

(e) Production and processing of fishery products.

11. Petroleum Administrator for Defense.

(a) Production.

(b) Processing and refining.

(c) Distribution of petroleum and gas.

12. Administrator of Defense Transport Administration.

(a) Domestic transportation.

(b) Storage.

(c) Port facilities.

13. Secretary of Commerce.

(a) Maritime Administration programs.

(b) Bureau of Public Roads programs.

(c) Civil aviation programs.

(d) Other Departmental programs, except certain Office of International Trade and National Production Authority programs.

14. Administrator of National Production Authority (NPA).

(a) Production of materials and products not elsewhere assigned.

(b) Related production equipment.

(c) Related industrial facility construction.

(d) Civilian communications.

(e) Water and sewage facilities.

(f) Other NPA programs as specified in (15), (16) and (17) below.

15. Office of Civilian Requirements or other appropriate organizational unit (NPA) with respect to programs (except construction) for:

(a) State and local governments not elsewhere specifically designated.

(b) Consumer goods including items in common use not elsewhere specifically designated.

(c) Wholesale, retail and service trades.

(d) Religious institutions.

16. Facilities Bureau or other appropriate organizational unit (NPA) with respect to construction programs for:

(a) State and local community facilities not elsewhere specifically designated.

(b) Wholesale, retail, and service trades.

(c) Religious institutions.

(d) Private industrial facilities not elsewhere designated.

(e) Private social and recreational activities.

17. Canadian Division or other appropriate organizational unit (NPA).

(a) Canadian programs.

18. Director of Office of International Trade (Department of Commerce).

(a) All exports not elsewhere designated.

19. Administrator of Economic Cooperation Administration.

(a) Non-military exports to ECA countries.

(b) Exports for additional military production under Mutual Defense Aid Program and common-use items under other approved military programs.

Allotment Accounting for Consumers

A. General Requirements for Obtaining an Allotment

1. CLASS A PRODUCERS:

If you produce a class A product (which is a product containing controlled materials not classified in the Official CMP Class B Product List) you will generally get your allotments of controlled materials from the person to whom you sell the product. That "person" may be either (*a*) a claimant agency, (*b*) a prime consumer, or (*c*) a secondary consumer.

Except for the controlled materials required for class B products to be incorporated in your class A product, your application for an allotment—made on Form CMP-4A—must include not only the amounts of controlled materials needed by you, but also those needed by your secondary consumers (subcontractors), if any, to produce the order you have received.

You should make out a separate Form CMP-4A for each class A product, and in making out the application you should furnish all information requested on the form. You must include a production schedule showing the calendar quarter in which you will produce the product for which you are requesting materials.

2. CLASS B PRODUCERS:

If you produce a class B product (which is a product in the Official CMP Class B Product List requiring the filing of an application for controlled materials to produce it) you must apply on Form CMP-B for an allotment of controlled materials. Your application should be sent to the industry division of NPA or to the claimant agency identified with your product in the official CMP Class B Product List (available from your nearest Department of Commerce Field Office). **For the production of that class B product, you may not accept an allotment from any other source.**

Your Form CMP-4B must show all the controlled materials needed to produce your class B product, including any controlled materials needed by your subcontractors to produce class A products to be incorporated in your class B product.

You may include in a single application requests for the production of any number of class B products provided they are all under one product code class, but you must file separate applications for products which are in different code classes. Whether you file a separate application, therefore, is determined by product class and not by individual products. Note, too, that separate applications must be filed for repair parts by product classes.

REMEMBER—In making applications on either CMP-4A or CMP-4B that producers of class B products which you will need for your production, will receive their allotments direct from the NPA, and you need not apply for controlled materials they need.

B. Receipt of an Allotment

Prime consumers will receive allotments of controlled materials directly from claimant agencies or industry divisions of NPA on forms prescribed by them.

Secondary consumers (those who receive allotments of controlled materials from persons other than claimant agencies or industry divisions of NPA) will ordinarily receive such allotment on Form CMP-5 "Short Form of Allotment," or other appropriate forms.

C. Code Identification

Allotment forms will bear a code number consisting of a letter and a digit which will be used to identify Claimant Agency and Industry Division programs. This code number will be the "allotment identification" for accounting purposes.

D. Allotment Records

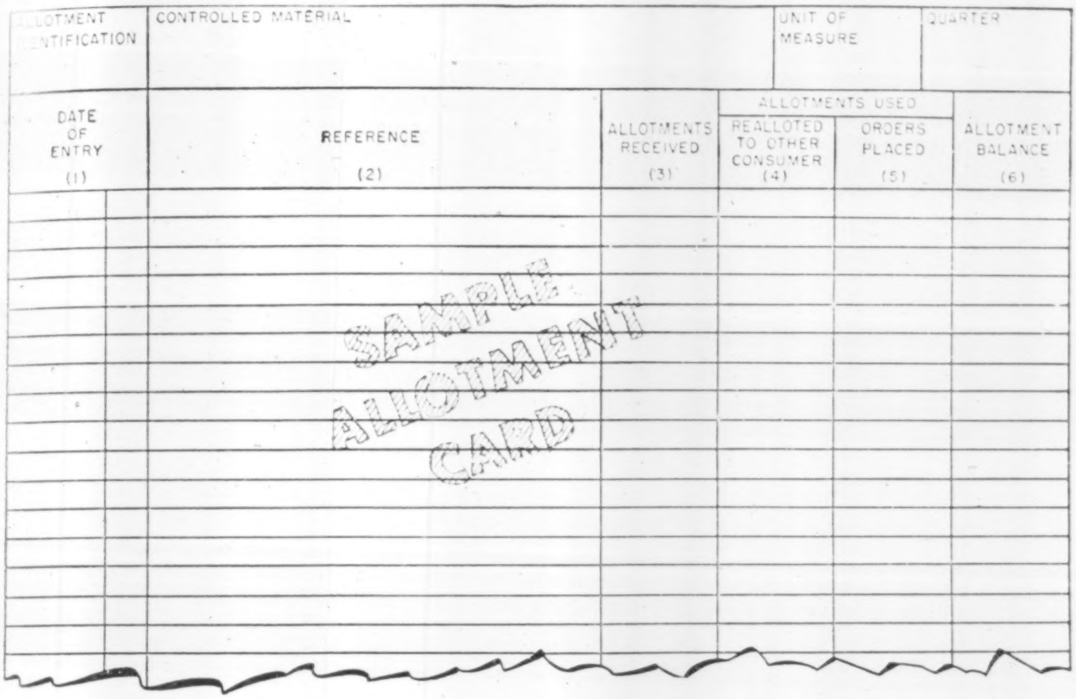
1. TYPE OF RECORDS REQUIRED:

Every person, regardless of class of producer or class of consumer, who receives an allotment of a controlled material must maintain records to account for the receipt and use of the allotment.

Such records must show (*a*) the material being accounted for, (*b*) identifying program information, (*c*) the unit of measure, (*d*) the calendar quarter for which valid, (*e*) quantities received, (*f*) quantities reallotted to other consumers, (*g*) quantities ordered direct from suppliers, (*h*) the allotment balance available, and (*i*) dates and posting references.

The basic record suggested for this purpose is a simple allotment card because it is a flexible medium for keeping separate accounts for each allotment of controlled materials.

The heading of an allotment card should contain space for entering the allotment identification, the



ALLOTMENT IDENTIFICATION	CONTROLLED MATERIAL			UNIT OF MEASURE	QUARTER
DATE OF ENTRY (1)	REFERENCE (2)	ALLOTMENTS RECEIVED (3)	ALLOTMENTS USED REALLOTED TO OTHER CONSUMER (4)	ALLOTMENTS USED ORDERS PLACED (5)	ALLOTMENT BALANCE (6)

SAMPLE ALLOTMENT CARD

Complicated records are not needed for CMP. This sample card prepared by the Controlled Materials Division of the National Production Authority is adequate for posting all information necessary to account for the receipt and use of an allotment under CMP.

name of the controlled material, the unit of measure, and the calendar quarter during which the allotment is valid.

The body of the card should contain columns for recording date of entry, appropriate reference, quantities received, quantities reallotted to other consumers, orders placed, and the allotment balance.

2. SEPARATE RECORDS REQUIRED:

There are three major factors which tell you whether you must establish a separate record of allotment. These are (*a*) the allotment identification, which for this purpose consists only of a letter and a digit designating the particular program of a Claimant Agency or NPA Industry Division; (*b*) the kind of controlled material; and (*c*) the calendar quarter for which the allotment is valid. To illustrate:

A separate record must be established for each allotment identification. For example, if you receive two different allotments of carbon steel, one identified with the number A-1 and the other identified with the number B-2, you must keep a separate record for each separately identified allotment. If you should subsequently receive for use within the same quarter two additional allotments of carbon steel, one identified A-1 and the other A-2, the A-1 allotment may be entered on the A-1 allotment card you previously prepared, but a separate record must be established for the A-2 allotment.

A separate record must be established for each controlled material as defined in CMP Regulation 1. For example, you must maintain separate records for an allotment of carbon steel and an allotment of aluminum even though both allotments bear the same allotment identification number and are valid within the same calendar quarter.

A separate record must be established for each calendar quarter. For example, after having received an allotment of carbon steel identified as A-1 for use in the third quarter of 1951, you subsequently receive an additional allotment of the same material for the same program, *but for the fourth quarter of 1951, you must set up a separate record.*

Checklist on Controls

SUPPLEMENTING the Controlled Materials Plan in the limiting of demand to the supply of materials are the National Production Authority's materials (M) orders, regulations and delegations. They have been utilized since the government placed controls on production and materials supplies in 1950 upon the outbreak of the Korean war. The materials orders, regulations and delegations have been amended and added to as conditions have necessitated, and they are being retained and tailored to work in conjunction with the CMP.

For your convenience, STEEL compiled a checklist of all of the materials orders, regulations and delegations issued thus far by NPA. The checklist gives you both a record and a brief digest of each order, regulation, delegation and amendments.

NPA Materials Orders

ALUMINUM

NPA Order M-5, effective Oct. 27, 1950, provides rules for placing, accepting and scheduling defense rated orders for aluminum.

Amendment of NPA Order M-5, effective Feb. 1, 1951, requires aluminum producers and fabricators to accept a larger percentage of defense rated orders.

Amendment of NPA Order M-5, effective Apr. 1, 1951, increases by 5 percentage points on Apr. 1, 1951, the supplies of aluminum available to independent, nonintegrated primary aluminum fabricators to fill defense rated orders.

Amendment of NPA Order M-5, effective Apr. 1, 1951, increases by 15 percentage points the amount of aluminum that aluminum producers and fabricators must set aside for filling defense-rated orders and by 20 percentage points the amount that distributors and jobbers must set aside for that purpose. This means that producers of primary aluminum must set aside each month 60 per cent of their scheduled production in terms of total primary pig tonnage for that month, fabricators must set aside each month 60 per cent of their average monthly shipments during the first eight months of 1950, and distributors and jobbers must set aside each month 45 per cent of the aluminum products available to them that month.

NPA Order M-7, effective Nov. 13, 1950, provides that in each quarter after Jan. 1, 1951, users of aluminum may not use for nondefense purposes within each quarter more than 65 per cent of the average quarterly use of aluminum during the first six months of 1950.

Direction 1 to NPA Order M-7, effective Nov. 28, 1950, provides for adjustments in the use of aluminum in December, 1950.

Amendment of NPA Order M-7, effective Dec. 1, 1950, raises limit on nondefense consumption of aluminum in January, 1951, to 80 per cent of the average monthly rate in the first half of 1950; February, 1951, is to be 75 per cent; and March, 1951, 65 per cent.

Direction 2 to NPA Order M-7, effective Dec. 16, 1950, provides for adjustments in base period calculations to determine permissible usage of aluminum.

Direction 3 to NPA Order M-7, effective Dec. 27, 1950, permits an increase in the amount of aluminum that can be used in the manufacture of strictly functional component parts during March, 1951.

Amendment of NPA Order M-7, effective Feb. 1, 1951, lists more than 200 items in which aluminum cannot be used on and after Apr. 1, 1951.

Amendment of NPA Order M-7, effective Feb. 21, 1951, orders gradual elimination of manufacture of aluminum windows and air ducts.

Amendment of NPA Order M-7, Mar. 9, 1951, permits aluminum usage in the second quarter of 1951 at the rate of 65 per cent of the average quarterly use in the first half of 1950, and stipulates that certain prohibitions do not apply to use of aluminum unsuitable for certain purposes.

Amendment of NPA Order M-7, effective Mar. 31, 1951, postpones until May 1, 1951, the prohibition on the use of aluminum in the manufacture of more than 200 civilian products, continues limitation on use of aluminum for nondefense purposes in the second quarter of 1951 to 65 per cent of the average quarterly consumption in the first half of 1950, extends restrictions on use of aluminum to include companies who use aluminum powder, permits aluminum fabricators to accept defense-rated orders from the armed forces for certain items on the prohibited list, and exempts procurement and use of aluminum conductors and accessories by electric utilities from M-7. Utilities are now covered under NPA Order M-50.

Amendment of NPA Order M-7, effective Apr. 6, 1951, shifts control over aluminum closures to the packaging closures order, M-26, to simplify administration.

Amendment of NPA Order M-7, Apr. 20, 1951, permits limited use of aluminum during May and June, 1951, in the manufacture of more than 200 consumer items in which the use of aluminum was to have ceased May 1, 1951. Producers and assemblers of these goods are permitted to use during each of those two months 50 per cent as much aluminum as they used in the average month of the first half of 1950.

Amendment of NPA Order M-7, effective May 1, 1951, permits makers of certain types of prime aluminum windows and frames to use during each of the months of May and June, 1951, up to 65 per cent of their monthly average consumption of the metal during the first half of 1950.

Amendment of NPA Order M-7, effective June 1, 1951, does the following: (1) Provides that retail dealers who must assemble aluminum parts at the point of installation are exempt from M-7's provisions limiting assembly to 50 per cent of the base period rate; (2) increases permitted use of aluminum to make aluminum wool for aircraft maintenance and automotive air filters from 50 per cent to 65 per cent of the base period rate of usage; (3) shifts use of aluminum for containers and packaging to coverage under NPA Order M-67; (4) adds emphasis to prohibition of aluminum in architectural and building ornamentation; and (5) states that when a use of aluminum is exempted from M-7 the amount of aluminum used in exempted products must be deducted from the total base period consumption in computing a manufacturer's present permitted usage.

NPA Order M-22, effective Jan. 12, 1951, regulates the segregation, acceptance, delivery and distribution of aluminum scrap, and prohibits undue accumulations of such scrap. Thirty-two approved aluminum smelters and four approved aluminum fabricators are listed in the order.

Amendment of NPA Order M-22, Jan. 23, 1951, postpones effective date of certain provisions of M-22 until Mar. 1, 1951, to permit inclusion of names of additional firms to process aluminum scrap. The amendment also allows foundries, certain types of chemical firms and others to obtain special kinds of scrap.

Amendment of NPA Order M-22, effective Mar. 1, 1951, adds 22 smelters and two fabricators to the list of those permitted to melt or otherwise use aluminum scrap.

NPA Order M-67, effective June 1, 1951, limits aluminum foil used in protective packaging to a thickness of 0.005 inch or less. For packaging of some products there is no consumption limit on the foil; others are limited to 100 per cent of the base period rate of usage; some to 90 per cent; and others to 65 per cent. Exempted from the order are defense-rated orders and orders for foil to be used as bottle cap liners and other packaging closures regulated by M-26. Otherwise, all uses of aluminum foil are now covered by M-67. Previously, foil usage was governed largely by M-7.

ANTIMONY

NPA Order M-39, effective Feb. 16, 1951 limits inventories of antimony to 60 days supply or a practicable working minimum whichever is less.

AUTOMOBILES

NPA Order M-68, issued June 2, 1951, and effective July 1, 1951, limits the use of steel copper and aluminum in passenger automobiles during the third quarter of 1951, without a direct control on unit production. The limitations will have the effect of reducing output 37 per cent from the third quarter 1950 output.

BINDER AND BALER TWINE

NPA Order M-58, effective Apr. 19, 1951 limits distributors' and farmers' inventories of binder and baler twine to 60 days' supply or a minimum practicable working inventory whichever is less.

BISMUTH

NPA Order M-48, Mar. 9, 1951, lists permitted uses of bismuth metal and alloys.

CADMIUM

NPA Order M-19, effective Jan. 1, 1951 lists permitted uses of cadmium, controls deliveries and limits inventories of cadmium to a 30-day supply.

Amendment of NPA Order M-19, Mar. 16, 1951, broadens the permitted uses of cadmium and lists them.

Amendment of NPA Order M-19, Apr. 26, 1951, adds classifications to the list of essential items in which cadmium may be used. They are: Ferrous nuts, bolts, screws and other threaded parts, washers, hi-shear rivets, lock bolts and cotter pins for use in aircraft; parts of automotive and aircraft fuel pumps which come into contact with fuel; and aircraft battery hold-down bars. The amendment also relieves manufacturers from necessity of issuing certification as to end uses of finished subassemblies ready for assembly by the purchaser into final end products.

CARDED COTTON SALES YARN

NPA Order M-23, effective Jan. 12, 1951, provides rules for placing, accepting and scheduling defense-rated orders for carded cotton sales yarn.

Amendment of NPA Order M-23, effective Mar. 31, 1951, increases the percentage of carded cotton sales yarn that producers must set aside for filling defense-rated orders and states that all spindles producing certain yarns on Mar. 12, 1951, must not be used for producing other carded cotton yarns.

CHEMICALS

NPA Order M-32, effective Jan. 23, 1951, provides that producers of ethyl cellulose will not be required to devote more than 40 per cent of any month's scheduled production to filling defense-rated orders.

Amendment of NPA Order M-32, effective Feb. 5, 1951, provides that producers of DDT will not be required to accept defense-rated orders for more than 25 per cent of their scheduled monthly production.

Amendment of NPA Order M-32, effective Mar. 1, 1951, provides that no producer will be required to accept defense-rated orders for more than 20 per cent of any month's scheduled output of barium carbonate.

Amendment of NPA Order M-32, effective May 1, 1951, adds several chemicals to M-32, the basic order which provides a system of equitable distribution of defense-rated orders.

NPA Order M-45, effective Mar. 16, 1951, provides the means by which any chemical may be allocated when need for regulation is demonstrated. It does not in itself place any chemical under allocation.

Schedule 1 to NPA Order M-45, Mar. 31, 1951, puts naphthenic acid under NPA allocation on an end-use basis at the supplier level, beginning Apr. 1, 1951.

Schedule 2 to NPA Order M-45, Apr. 6, 1951, puts poly tetra-fluor ethylene ("Teflon") under complete NPA allocation.

Schedule 3 to NPA Order M-45, Apr. 18, 1951, puts sulphuric acid under NPA allocation in 11 western states, and requires purchasers in all 48 states to certify to suppliers the end-uses to which the chemical is to be put. Purchasers of 60 tons or less of sulphuric acid a month are exempted from Schedule 3 to M-45.

Schedule 4 to NPA Order M-45, Apr. 20, 1951, puts plastic type nylon under NPA allocation June 1, 1951.

Schedule 5 to NPA Order M-45, May 11, 1951, puts polyethylene under NPA allocation June 1, 1951.

Schedule 6 to NPA Order M-45, May 11, 1951, puts resorcinol under NPA allocation June 1, 1951.

CHLORINE

NPA Order M-31, effective Jan. 23, 1951, provides rules for placing, accepting and scheduling defense-rated orders for chlorine and orders for chlorine essential to public health.

COBALT

NPA Order M-10, effective Nov. 30, 1950, limits cobalt inventories, beginning Nov. 30, 1950, to a 20-day supply.

Amendment of NPA Order M-10, effective Dec. 30, 1950, places cobalt under allocation, prohibits certain uses and limits inventories.

COLUMBIUM AND TANTALUM

NPA Order M-3, effective Oct. 19, 1950, reserves the production and use of columbium bearing stainless steels for defense needs and prohibits their use when any other substitute can be utilized.

Amendment of NPA Order M-3, effective Mar. 15, 1951, limits production, distribution and use of columbium and tantalum bearing steels to defense-rated orders and NPA directives.

Amendment of NPA Order M-3, effective Apr. 6, 1951, requires that defense-rated orders for columbium bearing and columbium-tantalum bearing steels for the aircraft program must be approved by the Aircraft Production Resources Agency, Department of Defense.

Amendment of NPA Order M-3, effective May 11, 1951, increases flexibility of restrictions on the use of columbium and tantalum to assure higher production of steel containing these alloys.

NPA Order M-49, effective Mar. 15, 1951, makes columbium and tantalum and their ferroalloys subject to allocation by NPA on and after Apr. 1, 1951.

Amendment of NPA Order M-49, effective Apr. 26, 1951, requires every person who consumed or had in his possession or under his control more than ten pounds of contained columbium and tantalum during any calendar month to file a report of his inventory and consumption by the seventh day of the following month. Prior to this amendment, this report had to be filed not later than the 15th of the month. The amendment also increases from 30 to 45 days the inventory of columbium and tantalum a person is permitted to have.

COMPONENTS OR PARTS

NPA Order M-17, effective Dec. 18, 1950, places a ceiling on the amount of defense-rated orders manufacturers are required to accept for certain electrical components and parts.

Amendment of NPA Order M-17, effective Mar. 23, 1951, authorizes manufacturers of rigid electrical conduit to reject defense-rated orders when they exceed 25 per cent of a firm's monthly output.

NPA Order M-60, effective May 14, 1951, specifies a rate of production of essential component parts, such as nuts, bolts, gears and valves, and provides a DO-70 rating for producers of them to use in obtaining materials during the third quarter of 1951. The first quarter of 1951 is considered the base period; permitted consumption of materials are these percentages of base period usage: Iron and steel products, 105; copper products, 100; and aluminum products, 95.

CONSTRUCTION

NPA Order M-4, effective Oct. 27, 1950, prohibits on and after Oct. 27, 1950, the construction of new buildings for amusement, recreational and entertainment purposes.

Revision of NPA Order M-4, Oct. 31, 1950, clarifies NPA's statement of policy as to prohibiting of construction in event future prohibitions are needed.

Amendment of NPA Order M-4, effective Nov. 15, 1950, clarifies and extends scope of NPA ban on construction for amusement, recreational or entertainment purposes.

Amendment of NPA Order M-4, effective Jan. 13, 1951, establishes a system under which virtually all new private commercial construction is subject to specific NPA authorization on and after Jan. 13, 1951.

Amendment of NPA Order M-4, effective Feb. 9, 1951, permits construction of buildings or structures for radio and television broadcasting, newspaper publishing and printing of books and periodicals without NPA authorization.

Amendment of NPA Order M-4, effective Feb. 19, 1951, permits an increase in expenditures for alterations and additions to hotels and office and loft buildings.

Amendment of NPA Order M-4, effective Mar. 20, 1951, provides for alterations to store-space in department stores, defines hotel, defines construction cost, permits construction of terminal warehouses, and permits construction by or for the National Advisory Committee for Aeronautics.

Amendment of NPA Order M-4, effective Apr. 16, 1951, prohibits the beginning of any new swimming pool construction, and places tobacco auction warehouses on the list of commercial projects on which construction may not be commenced without NPA authorization.

Amendment of NPA Order M-4, effective May 3, 1951, requires authorization for construction of large apartment houses, luxury residences and all industrial facilities and public and private construction projects which require the use of more than 25 tons of steel.

Amendment of NPA Order M-4, effective May 11, 1951, exempts construction of industrial plants, facilities or factories for which a certificate of necessity has been issued from all restrictions of M-4; grants a specific small job exemption to permit construction of additions, improvements or modernization of industrial plants, factories or other facilities where the total steel used will not exceed 25 tons; and makes unmistakable the application of the M-4 restrictions upon construction of gymnasiums, printing establishments, and facilities for storage, distribution, display or sale of consumer goods.

CONSTRUCTION MACHINERY

NPA Order M-43, effective Mar. 2, 1951, stipulates that producers need not accept defense-rated orders in excess of 50 per cent of their average monthly shipment of the first half of 1950.

COPPER

NPA Order M-11, effective Nov. 29, 1950, provides rules for placing, accepting and scheduling defense rated orders for copper and copper-base alloys.

NPA Order M-12, effective Nov. 29, 1950, limits nondefense production and use of brass mill, copper wire mill and foundry products in the first quarter of 1951.

Amendment of NPA Order M-12, effective Dec. 30, 1950, lists articles in which copper cannot be used on and after Mar. 1, 1951.

Direction 1 to NPA Order M-12, effective Feb. 1, 1951, permits producers and users of copper and copper-base alloys to readjust their base period use averages in cases where manufacturing or construction operations were shut down more than 15 consecutive days in the first half of 1950.

Amendment of NPA Order M-12, Feb. 19, 1951, relaxes some restrictions on use of copper and adds other restrictions.

Amendment of NPA Order M-12, effective Feb. 27, 1951, permits until Apr. 30, 1951, the use of copper fins in heating and ventilating equipment used in home and other construction.

Amendment of NPA Order M-12, Mar. 9, 1951, reduces permitted use of copper by fabricators in the second quarter of 1951 to 75 per cent of their average quarterly use in the first half of 1950.

Amendment of Direction 1 to NPA Order M-12, effective Mar. 14, 1951, permits making of automatic adjustments in calculating base-period consumption of copper and copper-base alloys.

Direction 2 to NPA Order M-12, effective Mar. 27, 1951, extends for the second quarter of 1951 permission to make adjustments in permitted consumption of copper and copper-base alloys by companies shut down during the base period of 1950.

Amendment of NPA Order M-12, effective Apr. 1, 1951, permits buying and selling of copper parts for use in prohibited items, provided the parts are not suitable for use in permitted items. The amendment also permits use of copper in fins for unit heaters and ventilators, blast heating coils, or any apparatus using such coils, and in shells and caps for sockets for military use. Certification of use in accordance with M-12 is no longer required in connection with deliveries of copper and copper-base alloy scrap.

Amendment of NPA Order M-12, Apr. 9, 1951, exempts electric power companies from its provisions as far as use of the copper products specified in NPA Order M-50 are concerned. Utilities will remain subject to M-50's restrictions with regard to other forms and shapes of copper.

NPA Order M-16, Dec. 11, 1950, regulates the acceptance, delivery and distribution of copper scrap and copper-base alloy scrap, and prohibits undue accumulation of such scrap.

Amendment of NPA Order M-16, Dec. 18, 1950; puts an immediate ban on toll agreements in copper scrap.

Amendment of NPA Order M-16, effective Jan. 31, 1951, permits miscellaneous producers of copper and copper-base alloys, such as foundries and chemical plants, to melt and process copper scrap generated in their own plants.

COTTON DUCK

NPA Order M-23, Mar. 31, 1951, requires cotton duck manufacturers to accept defense-rated orders up to 80 per cent by weight of their scheduled production, beginning Apr. 1, 1951, and stipulates that looms making duck during the week beginning Jan. 14, 1951, must not be used in the production of any other fabric.

ELECTRIC UTILITIES

NPA Order M-50, effective Apr. 1, 1951, permits electric power companies to use priority rating DO-48 to obtain aluminum wire, cable and bus bar. At the same time, NPA Order M-7 is amended to exempt electric power companies from its provisions as far as use of aluminum conductor and accessories is concerned. The utilities remain subject to M-7's restrictions on other forms and shapes of aluminum.

Amendment of NPA Order M-50, effective Apr. 9, 1951, permits electric power companies to use priority rating DO-48 to obtain certain copper wire and brass mill and foundry items. At the same time, NPA Order M-12 is amended to exempt electric power companies from its provisions as far as use of the copper products specified in M-50 are concerned. The utilities remain subject to M-12's restrictions on other forms and shapes of copper.

Amendment of NPA Order M-50, effective May 1, 1951, extends from May 1 to June 1, 1951, the right of electric utility companies to use materials now on hand in making major plant additions without specific approval of the Defense Electric Power Administration. The amendment also permits electric utility companies to use DO-48 ratings to obtain aluminum conductor accessories needed in using aluminum conductor.

Amendment of NPA Order M-50, effective June 5, 1951, formally adds steel as a program material to copper and aluminum supplies previously earmarked for the electric power industry.

FARM EQUIPMENT

NPA Order M-55, effective Mar. 31, 1951, authorizes producers of farm equipment to use a defense rating of DO-87 to obtain materials and component parts needed for production in June, 1951.

NPA Order M-55A, effective May 11, 1951, permits production of farm equipment during the third quarter of 1951 at a rate similar to production in the third quarter of 1949, and authorizes farm equipment manufacturers to use a DO-87 rating to obtain steel, copper, aluminum and zinc and component parts needed during the third quarter.

FEATHERS

NPA Order M-56, effective Apr. 16, 1951, restricts the sale, delivery and processing of waterfowl feathers and down to defense-rated orders.

GLASS CONTAINERS

NPA Order M-51, effective Mar. 31, 1951, prohibits new designs in glass containers after Mar. 31, 1951.

Schedule 1 to NPA Order M-51, effective Apr. 27, 1951, establishes and illustrates simplified designs for 42 basic glass containers.

GRAPHITE

NPA Order M-66, effective May 31, 1951, puts artificial graphite and carbon electrodes under NPA allocation July 1, 1951, and sets up inventory limitations.

HIDES

NPA Order M-29, effective Jan. 17, 1951, reserves for defense-rated orders that portion of the supply of leather produced from horsehide fronts and deerskins which meets federal specifications.

Amendment of NPA Order M-29, effective Feb. 19, 1951, permits the processing of individually-owned deerskins into items for personal use or for gifts.

Amendment of NPA Order M-29, effective May 15, 1951, transfers to M-62 all restrictions on all hides and skins except those relating to deerskins.

NPA Order M-35, effective Feb. 5, 1951, defers sales and deliveries, pending establishment of a distribution program for cattlehides, calfskins and kips.

Amendment of NPA Order M-35, effective Feb. 28, 1951, provides for allocation of cattlehides, calfskins and kips.

Amendment of NPA Order M-35, effective May 11, 1951, governing cattlehides, calfskins and kips, defines "practicable minimum working inventory" and stipulates that defense order ratings cannot be used to obtain cattlehides, calfskins and kips.

NPA Order M-62, effective May 15, 1951, takes over from NPA Order M-29 the restrictions on processing horsehide fronts and adds restrictions on a number of other hides and skins. M-29 now relates only to deerskins.

HOG BRISTLES

NPA Order M-18, effective Dec. 21, 1950, puts restrictions on sales and inventories of hog bristles.

Amendment of NPA Order M-18, effective Jan. 12, 1951, governs use, inventories and distribution of hog bristles and bristle products.

Amendment of NPA Order M-18, effective Mar. 30, 1951, tightens controls on the end-use of hog bristles.

INSECT WIRE SCREENING

NPA Order M-42, effective Mar. 2, 1951, sets limits on amount of defense-rated orders producers must accept for insect wire screening.

LEAD

NPA Order M-38, effective Feb. 16, 1951, limits inventories of lead to 60 days' supply or a practicable working minimum, whichever is less.

Amendment of NPA Order M-38, effective Apr. 3, 1951, stipulates that effective May 1, 1951, consumers are to limit their use of lead for civilian purposes to 100 per cent of their rate of use of the metal during the first half of 1950; lead used in filling defense-rated orders is not affected by the limitation. Refiners and dealers are required by the amendment to set aside 20 per cent of their available lead supply each month to fill defense-rated orders; permitted inventories are reduced from 60 to 30 days' supply; scrap toll or similar agreements must be approved by NPA; and any manufacturer whose inventory is more than ten short tons on any day must report the inventory to the U. S. Bureau of Mines.

Amendment of NPA Order M-38, effective May 28, 1951, requires a dealer to set aside for defense orders 25 per cent of his anticipated monthly production of lead products. The set-aside previously was 20 per cent. Beginning June 1 for July shipment, primary refiners must set aside 5 per cent of their anticipated monthly production of pig lead to meet hardship cases. Use of lead forms and materials, beginning June 1, 1951, is restricted to not more than 100 per cent of the average monthly use by weight during the first six months of 1950. Production of pig lead is exempted from this restriction.

LEATHER

NPA Order M-28, effective Jan. 17, 1951, provides rules for placing, accepting and scheduling defense-rated orders for leather.

NPA Order M-34, effective Feb. 5, 1951, requires that wholestock be cut and processed to meet military specifications as to weight and quality.

Amendment of NPA Order M-34, effective Mar. 8, 1951, permits wholesalers, commercial merchants and dealers to buy leather wholestock if it is then sold to sole cutters exclusively.

METAL PRINTING PLATES

NPA Order M-65, effective May 3, 1951, limits the time obsolete metal printing plates can be held by various types of printing establishments. Excepted from provisions of the order are plates made only of lead, tin and antimony.

METALWORKING MACHINES

NPA Order M-40, effective Feb. 28, 1951, sets up a system of "pool orders," under which the General Services Administration will give manufacturers firm orders for machine tools for the defense program.

NPA Order M-41, effective Feb. 28, 1951, sets up a system for regulating delivery of machine tools produced under "pool orders."

NPA Order M-61, effective May 14, 1951, permits machine tool producers to use a DO-75 priority rating in obtaining materials for production in the third quarter of 1951, and specifies maximum amounts of iron and steel, copper and aluminum that may be used. In most instances this limit is more than 100 per cent of the base period use.

METHYLENE CHLORIDE

NPA Order M-21, effective Jan. 11, 1951, restricts uses of methylene chloride.

MOLYBDENUM

NPA Order M-33, effective Jan. 27, 1951, limits molybdenum inventories to a 20-day supply.

Amendment of NPA Order M-33, effective Mar. 27, 1951, provides that after May 1, 1951, molybdenum shall be allocated on the basis of end-use essentiality.

Amendment of NPA Order M-33, effective May 1, 1951, stipulates that applications for allocations of all forms of molybdenum except metal powder, wire, rod and sheet must be filed no later than the seventh day of the month preceding the month in which delivery is requested. The lead time previously was 45 days. Lead time for filing requests for allocations of molybdenum metal powder, wire, rod and sheet remains at 45 days.

NPA Order M-52, effective Mar. 31, 1951, limits the molybdenum content of stainless steels to 2.5 per cent maximum by weight.

NICKEL

NPA Order M-14, effective Dec. 1, 1950, limits consumption of primary nickel for nondefense purposes during the first quarter of 1951.

Amendment of NPA Order M-14, effective Jan. 23, 1951, lists a wide range of products in which nickel silver or nickel plate must not be used on and after Mar. 1, 1951, and items in which nickel bearing stainless steel or high-content nickel alloys must not be used on and after Apr. 1, 1951.

Amendment of NPA Order M-14, effective Feb. 8, 1951, prohibits manufacturers from extending priority ratings to replace nickel used prior to Jan. 1, 1951, for manufacture of stainless steel, high nickel alloy, nickel silver and any other nickel-bearing alloy material.

Amendment of NPA Order M-14, Feb. 28, 1951, permits nickel, stainless steel or high nickel alloys held in inventory to be used after Mar. 1, 1951, in manufacture of certain products provided the inventories are not suitable for use in the manufacture of other more essential items.

Amendment of NPA Order M-14, Mar. 31, 1951, includes a new list of items in which nickel must not be used after Apr. 15, 1951, reduces nickel permitted in nickel silver for certain items, and continues for the second quarter of 1951 the limitation on consumption of primary nickel for nonrated orders at 65 per cent of the user's average quarterly use during the first half of 1950.

PACKAGING CLOSURES

NPA Order M-26, effective Jan. 27, 1951, lifts restrictions upon tin plate closures.

Amendment of NPA Order M-26, effective Apr. [illegible], 1951, establishes a quota system to govern packers' use of aluminum closures.

Interpretation 1 to NPA Order M-26, May 4, 1951, stipulates that packers who use aluminum foil or other types of aluminum sealing devices must include in their inventory count all closures in their possession or held by others for them.

Amendment No. 1 to NPA Order M-26, effective June 7, 1951, specifies that alcoholic and certain non-alcoholic beverage drinks are in the class of products limited to 65 per cent of their base period use of aluminum caps.

PAPER

NPA Order M-36, effective Feb. 8, 1951, requires producers of paper to establish reserves of designated grades to fill qualified government orders.

Amendment of NPA Order M-36, effective Mar. 21, 1951, permits private printing firms operating under contract with the U. S. Government Printing Office to order paper stock from special reserves set up under NPA Order M-36.

Amendment of NPA Order M-36, effective Apr. 20, 1951, revises amounts of paper which mills must set aside for filling essential government orders.

PETROLEUM AND GAS

NPA Order M-46, effective Mar. 12, 1951, sets up rules under which priorities assistance is made available to petroleum and gas operators to obtain material for maintenance, repair and operating purposes.

Amendment of NPA Order M-46, effective June 1, 1951, provides priorities assistance for United States and Canadian operators for production and construction operations and gears this assistance program into the Controlled Materials Plan.

NPA Order M-46B, effective June 1, 1951, divorces the petroleum and gas industries from control under NPA Order M-4 (construction) and gives them a separate order to govern their construction.

PLATINUM

NPA Order M-54, effective Mar. 31, 1951, restricts platinum deliveries to dealers, refiners, distributors, processors and consumers, prohibits the use of platinum and platinum alloys in jewelry and other items, places restrictions on the sale and delivery of scrap, prohibits delivery of platinum to processors having more than a specified amount of scrap, and limits processors' and consumers' inventories of platinum.

PLYWOOD

NPA Order M-63, effective May 16, 1951, requires manufacturers of softwood plywood to set aside each month 20 per cent of their average monthly production, figured on base period output, as a reserve for filling of defense-rated orders.

POWER EQUIPMENT

NPA Order M-44, effective Mar. 5, 1951, requires makers of heavy power equipment to file monthly reports, beginning not later than Mar. 15, 1951, showing orders on hand for such equipment and the related production and delivery schedules, and on and after Mar. 16, 1951, to maintain, modify or alter production and delivery schedules as the NPA may direct.

RAYON

NPA Order M-13, effective Dec. 1, 1950, provides rules for placing, accepting and scheduling defense rated orders for high tenacity rayon yarn.

Amendment of NPA Order M-13, effective Feb. 15, 1951, requires producers of high tenacity rayon yarn to accept defense-rated orders up to 15 per cent of their scheduled monthly production.

Amendment of NPA Order M-13, effective May 17, 1951, increases from 15 per cent to 30 per cent the amount of monthly scheduled production of high tenacity rayon yarn that must be set aside for filling of defense-rated orders.

RUBBER

NPA Order M-2, effective Nov. 1, 1950, limits use of natural rubber during November and December, 1950, and establishes procedures for formal NPA allocation of synthetic rubber produced in U. S. government plants.

Amendment of NPA Order M-2, Dec. 11, 1950, reduces consumption of natural rubber 28 per cent in January and February, 1951, from the November, 1950, level.

Amendment of NPA Order M-2, Dec. 29, 1950, provides that on and after that date only the administrator of the General Services Administration may import crude natural rubber or natural rubber latex, except where he gives specific authorization to others.

Amendment of NPA Order M-2, Feb. 1, 1951, gives notice of coming requirements for simplification of styles, types and colors in rubber products and reduces civilian consumption of new rubber in February, 1951.

Supplement 1 to NPA Order M-2, Feb. 19, 1951, orders simplification of rubber products.

Amendment of NPA Order M-2, Mar. 1, 1951, increases amount of rubber available for civilian consumption, effective Mar. 1, and delays until Mar. 15, the effective date of the rubber industry's recommendations for conserving natural rubber in a wide variety of products.

Amendment of NPA Order M-2, effective Apr. 1, 1951, permits automobile manufacturers to deliver only four tires and four tubes with each new automobile.

Amendment of NPA Order M-2, effective Apr. 1, 1951, permits new passenger automobiles to meet military and defense-rated orders to continue to be equipped with spare tires.

Amendment of NPA Order M-2, effective May 1, 1951, increases monthly consumption of rubber for many civilian items to 100 per cent of the monthly average of the year ended June 30, 1950.

Amendment of NPA Order M-2, effective May 21, 1951, clarifies several sections of the order.

SCARCE MATERIALS

NPA Notice 1, effective Dec. 27, 1950, designates scarce materials, the undue accumulation of which is unlawful.

Amendment of NPA Notice 1, effective Jan. 10, 1951, adds to the NPA list of scarce materials subject to anti-hoarding provisions of the Defense Production Act.

SCRAP

NPA Order M-20, effective Jan. 4, 1951, limits inventories of iron and steel scrap that can be held by dealers, brokers, automobile wreckers and producers of scrap.

Amendment of NPA Order M-20, effective Jan. 29, 1951, provides that the NPA can increase or decrease iron and steel scrap inventories in consumers' hands and allocate scrap and specifically direct the manner and quantities in which such deliveries shall be made.

Amendment of NPA Order M-20, effective May 28, 1951, was made to give a cross-reference that the delivery and acceptance of used rails and used axles are subject to NPA Order M-64 also.

NPA Order M-64, effective May 28, 1951, provides that after May 31, 1951, no person shall deliver or accept delivery of used rails or used axles of rerolling or scrap grade in an amount exceeding ten tons of each item in any one month except by written authorization from NPA. From time to time NPA will allocate the supply of used rails and axles and specifically authorize quantities that may be delivered for particular uses.

STEEL

NPA Order M-1, effective Oct. 12, 1950, provides rules for placing, accepting and scheduling of orders for steel when defense ratings (DO) are used. Mills are permitted to reject rated orders received less than 45 days before the first day of the month in which shipment is requested, and ceilings are set for acceptance of priority orders, based on both product and total tonnage. Products and their ceilings are listed in the order.

Amendment of NPA Order M-1, Oct. 26, 1950, provides for establishment of scheduled programs calling for production and delivery of steel for stated purposes over specified periods of time.

Supplement 1 to NPA Order M-1, Oct. 26, 1950, establishes a program to provide steel in the first quarter of 1951 to build at least 10,000 freight cars a month and to provide adequate repair and maintenance of used freight cars.

Supplement 2 to NPA Order M-1, Nov. 15, 1950, establishes a program to provide steel to construct 12 new Great Lakes cargo vessels.

Amendment of NPA Order M-1, Dec. 1, 1950, gives steel mills additional lead time in handling defense orders on some products, specifies maximum percentages of steel products that must be set aside a month for filling rated orders, and provides that nonintegrated steel mills are to get an equitable share of steel from integrated mills after rated orders and NPA directives are filled.

Supplement 3 to NPA Order M-1, Dec. 15, 1950, provides 8000 tons of steel a month during March, April, May and June, 1951, from United States steel mills for completing a Canadian-government sponsored freight car program.

Amendment of Supplement 1 to NPA Order M-1, Jan. 17, 1951, requires that builders or repairers of railroad freight cars have NPA authorization to place certified orders under the U. S. freight car program set up under Supplement 1.

Amendment of NPA Order M-1, Jan. 22, 1951: (a) Increases percentages of products that must be available for DO orders; (b) establishes specific inventory controls for most steel products at all levels of production and consumption; (c) adds several ferrous products to list of steel mill products originally covered by M-1; (d) establishes minimum mill quantities for rated or other NPA directed orders; (e) redefines "integrated" and "nonintegrated" mills; and (f) lengthens some of the previous lead-times for filling of rated orders.

Supplement 4 to NPA Order M-1, Feb. 16, 1951, provides approximately 9000 tons of steel a month during April, May and June, 1951, for United States shipyards to use in repair and conversion of seagoing vessels.

Amendment of NPA Order M-1, Mar. 1, 1951, requires steel producers to accept DO orders for as much as 20 per cent of their average monthly shipment of carbon and alloy plates, beginning in May. Previously the figure had been set at 15 per cent.

Amendment of NPA Order M-1, effective Mar. 15, 1951, increases amount of steel that mills must set aside for filling defense-rated orders.

Amendment of NPA Order M-1, effective Apr. 6, 1951, establishes virtually complete NPA control over use of ferroalloys in production of alloy iron, steel or nonferrous products, and sets the permitted maximum inventory of ferroalloys for alloying purposes at a 45-day supply or a practicable working minimum, whichever is less.

Amendment of NPA Order M-1, effective May 18, 1951, stipulates that converter customers of steel producers are to receive steel supplies sufficient to give them a minimum of 90 per cent per month of average monthly base period tonnage. Base period is the first eight months of 1950.

Amendment of NPA Order M-1, effective June 8, 1951, increases amounts of iron and steel castings which producers must set aside for filling of defense-rated orders. Monthly set-asides for steel castings range from 75 to 80 per cent of the average monthly shipments during the first eight months of 1950; set-asides previously were 20 per cent. Monthly set-asides for iron castings range from 60 to 65 per cent; previously they were 20 per cent. The amendment also increases the required set-aside of standard and other carbon rails from 10 to 90 per cent of base period shipments.

NPA Order M-47, effective Mar. 7, 1951, reduces the amount of iron and steel that may be used in certain products in the second quarter of 1951 to 80 per cent of the rate used in the average quarter of the first six months of 1950. The order lists products affected. It also requires users of conversion steel to continue using it at no less than the proportionate rate of conversion steel receipts to receipts of regular mill steel in the last half of 1950. The order does not apply to manufacture of replacement parts. Makers of consumer durable goods who used not more than 100 tons of iron and steel per quarter in the first half of 1950 are permitted to use an equal amount in the second quarter of 1951.

Amendment of NPA Order M-47, effective Apr. 4, 1951, tailors the order so that its limitations apply to small groups of closely related items. This will permit a manufacturer flexibility of production among the items within such a group but will prevent any widespread shifts of production from one class of product to another, since steel permitted for use in the manufacture of one group of items cannot be transferred to the manufacture of another group of items.

Amendment of NPA Order M-47, Apr. 24, 1951, exempts the following five categories of consumer goods from the 80 per cent restriction on the use of iron and steel: Medical, dental and hospital specialties; pens and mechanical pencils; table tops for kitchen, dinette and breakfast tables; ornamental lawn fence and railing; and miscellaneous items such as shoe trees.

Amendment of NPA Order M-47, effective May 4, 1951, reduces the use of steel for manufacture of passenger automobiles and station wagons for June, 1951, from 80 to 75 per cent of the monthly rate of usage during the first half of 1950.

Amendment No. 2 to NPA Order M-47, effective May 29, 1951, removes restrictions on the use of iron and steel for school desks and seats for the rest of the second quarter of 1951.

Amendment of NPA Order M-47, June 1, 1951, permits makers of passenger automobiles and station wagons to use during June, 1951, as much as 40 per cent of the amount of iron and steel they were allowed for the second quarter of 1951.

Amendment No. 1 to NPA Order M-47, issued June 2, 1951, and effective July 1, 1951, reduces the amount of iron and steel that can be used in most consumer durable goods in the third quarter of 1951 to 70 per cent of the base period rate of consumption. The amendment also permits the base period to be either the first half of 1950 or the last half of 1949. After July 1, 1951, automobiles will not be on the list of consumer durable goods covered by M-47; use of steel in them will be controlled by a separate order. Some additional products have been placed on the list of those affected by M-47.

STRAPPING

NPA Order M-59, effective May 1, 1951, places limitations on inventories and restricts the use of metal strapping. A 45-day inventory, or at least 1000 pounds, of such strapping is permitted. Use limitations do not apply to defense-rated orders or licensed exports.

SULPHUR

NPA Order M-69, effective June 1, 1951, orders sulphur suppliers to ship sulphur only when authorized by NPA, and limits sulphur users to 100 per cent of the 1950 rate of consumption. Restrictions on use are effective June 1, 1951; authorization to suppliers begins July 1, 1951.

TANNING MATERIAL

NPA Order M-57, effective Apr. 16, 1951, limits the use of vegetable tanning material.

TIN

NPA Order M-8, effective Nov. 13, 1950, limits inventories of alloys and other materials containing tin, excluding ores and concentrates, and requires reports on inventories, receipts, consumption, imports and distribution.

Amendment of NPA Order M-8, Dec. 18, 1950, specifies the rate of tin consumption permitted in the first quarter of 1951, restricts inventories, and encourages use of substitutes.

Amendment of NPA Order M-8, Jan. 9, 1951, permits smelters and refiners of secondary tin to use as much tin scrap and other secondary tin-bearing materials as result from normal processes in the production of pig tin, alloys or chemicals.

Amendment of NPA Order M-8, Jan. 27, 1951; limits uses of pig tin, secondary tin and certain tin-bearing products, effective Mar. 1, 1951.

Amendment of NPA Order M-8, Mar. 12, 1951, puts all domestic users of pig tin under allocation control May 1, 1951, makes a temporary, seasonal increase in tin allocations in the second quarter of 1951, and designates the Reconstruction Finance Corp. as the sole importer of tin into the U. S.

Amendment of NPA Order M-8, Apr. 2, 1951, permits suppliers of tin or tin products to acquire a normal resale inventory by anticipating receipt of buyers' end-use certificates. Formerly it was necessary for a supplier to wait until he received certification from the buyer before acquiring the necessary supply. The amendment also exempts scrap dealers and smelters from the end-use certification stipulation in the case of low-grade scrap containing not more than 6 per cent tin by weight.

NPA Order M-24, effective Jan. 27, 1951, lists permitted uses of tin plate and terne plate and tells the maximum permitted coatings of tin or terne metal for the various uses.

Amendment of NPA Order M-24, effective Apr. 3, 1951, extends the permitted use of terne plate and restricts the use of tin plate menders (recoated defective sheets) resulting from the production of electrolytic tin plate.

NPA Order M-25, effective Jan. 27, 1951, places restrictions upon cans made of tin plate and terne plate. Specifications for cans for various uses are listed.

Amendment of NPA Order M-25, effective Feb. 23, 1951, permits use of tin in cans for packing some products previously prohibited.

Direction 1 to NPA Order M-25, effective Mar. 12, 1951, provides a means by which canners of food and other products can increase their pack in certain cases where undue hardship would result under present base period provisions of the order.

Amendment of NPA Order M-25, effective Mar. 16, 1951, exempts the canning of products for overseas use of the armed services from the specifications and limitations of M-25.

Amendment of NPA Order M-25, effective Apr. 6, 1951, reduces can quotas for certain packs, such as beer and pet foods, and raises quotas for a few food items; establishes a more flexible can quota system; and sets up a preference system, beginning with the second quarter of 1951, under which can manufacturers unable to fill all orders are required to schedule production operations to deliver cans in a specified sequence.

Amendment of NPA Order M-25, effective Apr. 24, 1951, permits use of tin plate for one end of small black plate containers for packing whole, dried or skimmed milk.

Amendment of Direction 1 to NPA Order M-25, May 1, 1951, tightens provisions of M-25 to prevent any packer's consumption of cans made of tin plate or terne plate from exceeding that of the base period rate provided for by the order. The amendment eliminates two of the three alternative automatic methods for adjusting can quotas in cases of exceptional hardship brought about by establishment of the base period as the corresponding quarter of either 1949 or 1950.

Amendment of NPA Order M-25, effective May 31, 1951, supersedes the amendment dated Apr. 24, 1951, and permits the use of 0.25 tin plate for small powdered whole milk cans until July 31, 1951. Certain other restrictions on use of tin plate for containers of other milk products were relaxed.

NPA Order M-27, effective Jan. 27, 1951, puts restrictions upon collapsible tubes, specifies the amount of tin they may contain, and lists the amount of aluminum that may be used in manufacturing collapsible tubes.

TUNGSTEN

NPA Order M-30, effective Jan. 22, 1951, prohibits use of tungsten in certain products, limits inventories, and puts tungsten under allocation Mar. 1, 1951.

WAREHOUSES

NPA Order M-6, Nov. 8, 1950, provides rules to assist steel distributors in obtaining supplies of steel for carrying out their normal functions, requires steel producers to establish regular allotments of steel for purchase by steel distributors, provides special rules for extension of defense-rated orders by steel distributors, and specifies a tonnage and item limitation for required acceptance of rated orders by distributors.

Amendment of NPA Order M-6, effective Dec. 1, 1950, revised lead time provisions under which steel warehouses place orders with mills.

Amendment of NPA Order M-6, effective Dec. 15, 1950, stipulates the amounts of steel U. S. steel producers must allow their regular Canadian warehouse customers.

Amendment of NPA Order M-6, effective Mar. 15, 1951, requires steel producers to allot and ship each month not less than 8[illegible] per cent of a warehouse's base monthly tonnage of carbon steel, including orders bearing DO ratings which the distributors may have placed in accordance with NPA Order M-6. Base period is the first nine months of 1950.

ZINC

NPA Order M-9, effective Nov. 16, 1950, sets up rules for placing, accepting and scheduling defense rated orders for zinc. A 30-day lead time is provided in the scheduling of defense orders, and ceiling limitations on defense orders are established.

Amendment of NPA Order M-9, effective May 28, 1951, requires manufacturers of special high grade slab zinc to set aside 20 per cent of their anticipated monthly production of it, rather than only 10 per cent, for filling of defense-rated orders. Required acceptance of defense-rated orders for all other grades of slab zinc, zinc dust and zinc oxide remains at 10 per cent. Beginning June 1, 1951, producers and importers of slab zinc must set aside 5 per cent of their anticipated monthly production and imports as an emergency reserve.

NPA Order M-15, effective Dec. 1, 1950, permits on and after Jan. 1, 1951, the nondefense production and use of zinc products at 80 per cent of the average quarterly rate of the first half of 1950. The order also limits inventories of zinc and zinc products.

Amendment of NPA Order M-15, effective Jan. 15, 1951, defines the words "manufacture" and "slab zinc."

Amendment of NPA Order M-15, effective May 28, 1951, leaves use controls on slab zinc and alloys only. Limitations on the use of other zinc products were deleted from the revised regulation. Civilian consumption of special high grade slab zinc, beginning July 1, 1951, will be limited to 70 per cent of the average quarterly use during the first six months of 1950. Consumption of zinc alloys is restricted to 80 per cent of a user's average quarterly consumption by weight during the base period. Permitted inventories of zinc are reduced from a 45-day to a 30-day supply.

NPA Order M-37, Feb. 14, 1951, regulates the acceptance, delivery and distribution of zinc scrap. Undue accumulations of zinc scrap are prohibited.

NPA Regulations

NPA Regulation 1, Sept. 18, 1950, limits to a "practicable minimum working inventory" the quantities of various ferrous and nonferrous metals and minerals, chemicals, building materials, textile materials, rubber materials and forest products that can be ordered, received, or delivered.

Interpretations 1, 2, and 3 to Regulation 1. Issued Nov. 10, 1950, they cover methods of adjusting orders, the extent of imported materials exemption, and deliveries of goods through intermediate distributors.

NPA Regulation 2, Oct. 3, 1950, establishes a broad priorities system and authorizes assignment of a Defense Order (DO) rating to defense orders.

Amendment of NPA Regulation 2, Oct. 12, 1950, clarified precedence to be given orders received before Oct. 3, 1950, but given ratings prior to Oct. 31, 1950.

Interpretation 1 to NPA Regulation 2. Issued Oct. 20, 1950, the interpretation says the Department of Defense and the Atomic Energy Commission may assign to their suppliers of petroleum and food the right to apply DO ratings to procure containers, packaging and chemicals needed to fill defense contracts for petroleum and food.

Amendment of NPA Regulation 2, Nov. 16, 1950, adds wood pulp to list of products not subject to defense ratings.

Amendment of NPA Regulation 2, Jan. 11, 1951, authorized use of DO ratings carried by defense orders to procure accessories for production equipment for companies working on rated orders. This authorization was a temporary measure to serve until a maintenance, repair and operating supplies program could be set up.

Amendment of NPA Regulation 2, Feb. 27, 1951, cancels authorization given in amendment of Jan. 11 to use DO ratings to procure accessories for production equipment. Procurement of such accessories now can be made in accordance with maintenance, repair and operating supplies program set up under NPA Regulation 4.

NPA Regulation 3, Nov. 8, 1950, provides for extension of DO ratings to Canadian firms doing defense work.

Amendment of NPA Regulation 3, Apr. 16, 1951, extends to Canadian companies the right to apply for MRO assistance, and designates Canadian distributors and importers as eligible for priority aid.

Amendment of NPA Regulation 3, effective June 15, 1951, provides that all priority orders for maintenance, repair and operating supplies originating in Canada but issued against production in the United States shall be under NPA Regulation 3. Previously such purchases by Canadians were under NPA Regulation 4, which governs MRO purchases. The change brings together in one document all of the provisions affecting persons in Canada who make priorities purchases in the U. S., for Reg. 3 is the basic document which provides for comparable control, priorities and allocations systems between Canada and the U. S.

NPA Regulation 4, Feb. 27, 1951, permits use of a DO-97 rating to obtain supplies for maintenance, repair and operation of facilities.

Direction 1 to NPA Regulation 4, Feb. 27, 1951, governs MRO procurement in latter portion of first quarter of 1951.

Amendment of NPA Regulation 4, Apr. 16, 1951, removes certain products from the list of those for which a DO-97 rating can be used in procurement of maintenance, repair and operating supplies.

Direction 2 to NPA Regulation 4, May 1, 1951, permits use of a DO-97 rating by exporters in procurement of replacement parts and accessories for machinery and equipment for shipment to foreign countries during May and June, 1951.

Amendment of NPA Regulation 4, effective May 22, 1951, permits use of the DO-97 rating for purchase per quarter of up to 120 per cent, rather than only 100 per cent, of the quarterly average amount of maintenance, repair and operating supply items bought during the base period. Anyone using a DO-97 to get 20 per cent or less of his quarterly quota will also be permitted to purchase an unlimited MRO total without use of the rating. DO-97 use for capital additions is limited to 10 per cent of the quarterly quota or $750, whichever is higher. Companies with more than one plant now have the option of deciding whether MRO quotas shall be established for each plant or for the organization as a whole.

NPA Regulation 5, Apr. 25, 1951, establishes a three-member NPA Appeals Board to hear appeals for adjustment under NPA orders and regulations.

NPA Delegations

NPA Delegation 1, Oct. 3, 1950, authorizes secretary of defense to assign ratings under the NPA priorities system.

Amendment of NPA Delegation 1, Nov. 1, 1950, permits secretary of defense to redelegate authority to assign DO ratings.

Amendment of NPA Delegation 1, Dec. 29, 1950, gives secretary of defense authority to issue DO ratings for construction equipment for use on overseas construction projects.

Supplement 1 to NPA Delegation 1, Jan. 25, 1951, permits secretary of defense, and those to whom he redelegates authority, to reschedule deliveries of all types of aluminum forms and products used in the military aircraft and guided missiles programs.

Amendment of NPA Delegation 1, Feb. 12, 1951, permits secretary of defense to issue DO orders to procure commercial office equipment and supplies and certain miscellaneous items.

Amendment of Supplement 1 to NPA Delegation 1, effective Apr. 3, 1951, authorizes the secretary of defense to order that military aircraft magnesium scheduled for delivery to one manufacturer be shipped, when necessary, to another manufacturer.

Amendment of Supplement 1 to NPA Delegation 1, effective May 23, 1951, authorizes the secretary of defense to reschedule deliveries of instrument bearings for military aircraft production so that shipments scheduled for delivery to one manufacturer may, when necessary, be shipped to another manufacturer.

Amendment of Supplement 1 to NPA Delegation 1, effective June 15, 1951, authorizes the secretary of defense to reschedule, when necessary, the delivery of rated orders for all materials required in support of the aircraft program. Previously, authority to reschedule deliveries applied only to aluminum, magnesium and instrument bearings; other deliveries were dependent upon priority established by filing of rated orders.

NPA Delegation 2, Oct. 3, 1950, authorizes Atomic Energy Commission to assign ratings under the NPA priorities system.

Amendment of NPA Delegation 2, Nov. 2, 1950, permits Atomic Energy Commission to redelegate authority to assign DO ratings.

Amendment of NPA Delegation 2, Feb. 12, 1951, permits Atomic Energy Commission to issue DO orders to procure commercial office equipment and supplies and certain miscellaneous items.

NPA Delegation 3, Nov. 8, 1950, authorizes National Advisory Committee for Aeronautics to assign DO ratings.

Amendment of NPA Delegation 3, Feb. 12, 1951, permits National Advisory Committee for Aeronautics to issue DO orders to procure commercial office equipment and supplies and certain miscellaneous items.

NPA Delegation 4, Nov. 8, 1950, authorizes U. S. Coast Guard to assign DO ratings.

Amendment of NPA Delegation 4, Feb. 12, 1951, permits U. S. Coast Guard to issue DO orders to procure commercial office equipment and supplies and certain miscellaneous items.

NPA Delegation 5, Dec. 18, 1950, makes secretary of interior claimant for certain production facilities for minerals and metals and gives him allocation power over certain minerals and crude and intermediate metallic products.

Amendment of NPA Delegation 5, effective May 22, 1951, returns to the National Production Authority the allocation and priority controls on the manufacture and distribution of mining machinery which were vested in the Defense Minerals Administration.

NPA Delegation 6, Jan. 4, 1951, authorizes Civil Aeronautics Administration to issue DO orders to obtain materials and equipment to maintain and expand civil air transport and the Federal Airways System.

NPA Delegation 7, Feb. 5, 1951, authorizes 18 field offices of the U. S. Department of Commerce to act on applications for authorization to commence commercial construction.

Amendment of NPA Delegation 7, Mar. 14, 1951, empowers 11 additional field offices of the U. S. Department of Commerce to act on applications for authorization to commence commercial construction.

Amendment of NPA Delegation 7, effective Apr. 3, 1951, adds Louisville to the list of field offices authorized to act on applications for commencement of commercial construction.

Amendment of NPA Delegation 7, effective June 7, 1951, gives seven additional field offices of the U. S. Department of Commerce the authority to administer NPA Order M-4 on construction.

NPA Delegation 8, Feb. 12, 1951, authorizes the Department of State to assign DO ratings for certain materials to maintain and expand the Voice of America program.

NPA Delegation 9, Feb. 26, 1951, gives secretary of interior authority over production and distribution of industrial chemicals used principally in the petroleum industry.

NPA Delegation 10, effective Apr. 26, 1951, delegates authority to the Department of Agriculture to exercise certain allocation and priority functions over foods which have industrial uses.

NPA Delegation 11, effective May 4, 1951, authorizes the Defense Electric Power Administrator to re-delegate to the Rural Electrification Administrator certain functions of DEPA relating to priorities assistance for REA electric utility borrowers. These functions had been vested in the DEPA administrator by NPA Order M-50.

NPA Delegation 12, effective May 23, 1951, authorizes the Office of International Trade to assign DO ratings for procurement of controlled materials by licensed exporters.

NPA Delegation 13, effective May 25, 1951, authorizes the Petroleum Administration for Defense to assign defense order rating DO-48 to purchase orders for steel required in construction of petroleum and gas storage facilities.

Amendment of NPA Delegation 13, effective June 1, 1951, gives the Petroleum Administration for Defense the authority to issue authorizations for procurement of materials by petroleum and gas producers, subject to such conditions as the administrator of PAD may deem appropriate. This amendment clarifies PAD's authority in connection with NPA Order M-46.

NPA Delegation 14, effective June 7, 1951, authorizes eight government agencies to act on applications to commence construction of projects in certain categories under their jurisdictions.

Directory of DPA-NPA Officials

Here's a listing of officials in the Defense Production Administration and the National Production Authority, their office locations in Washington and their telephone numbers. The DPA and the NPA are now served by one giant switchboard—STerling 5200.

DEFENSE PRODUCTION ADMINISTRATION

Old GAO Bldg. except as noted—
STerling 5200

Acting Administrator: Edwin T. Gibson, Room 206, Ext. 4423.

Deputy Administrator for Resources Expansion: Maj. Gen. Thomas F. Farrell, 4th Floor, Ext. 5246.

Deputy Administrator for Small Business: John C. Pritchard, 3312 Commerce Bldg., Ext. 3561.

Director, Program and Requirements Division: Charles E. Wampler, Ext. 5314.

Director, Materials Policy Division: J. Morgan, Room 211, Ext. 3231.

Director, Conservation Coordination Division: Howard Coonley, Room 211B, Ext. 3401.

Chairman, Electronics Production Board: Edmund T. Morris Jr., Room 214, Ext. 4781.

Director, Defense Production Inquiry Center, Main Lobby, K. H. Bristol, Ext. 3238.

Acting Director of Public Information: Edward K. Moss, 5111 Commerce Bldg., Ext. 3564.

Acting Deputy Director of Public Information: Albert J. Lubin, 5111 Commerce Bldg., Ext. 3564.

NATIONAL PRODUCTION AUTHORITY

T is for Temporary T Building, C for Commerce Building, E for 801 E Street, N. W., OG for Old GAO Building, NG for New GAO Building—STerling 5200

Administrator: Manly Fleischmann, 5800 C, Ext. 4461.

Assistant Administrator, Metals and Minerals Bureau: Norman W. Foy, Second floor west NG, Ext. 5640.

Assistant Administrator for Production Controls, to manage the CMP: Walter C. Skuce, 5009 C, Ext. 4111.

Administrator, Chemical, Rubber and Forest Products Bureau: Francis J. Curtis, Second Floor, NG, Ext. 4261.

Assistant Administrator, for Small Business: John C. Pritchard, 3312 C, Ext. 3561.

Assistant Administrator, Facilities and Construction Bureau: Frank E. Creedon, 307 OG, Ext. 5151.

Assistant Administrator, Textile, Leather and Specialty Equipment Bureau: Horace B. McCoy, 3840 C, Ext. 5088.

Assistant Administrator, Industrial and Agricultural Equipment Bureau: Franz Stone, Third Floor NG, Ext. 3391.

Assistant Administrator, for Civilian Requirements: Lewis Allen Weiss, 1405 T, Ext. 4701.

Chairman, NPA Appeals Board: Munford Boyd, 5807 C, Ext. 3820.

NPA OFFICE OF PUBLIC INFORMATION

Director: Edward K. Moss, 5111 C, Ext. 3564.

Deputy Director: Albert J. Lubin, 5111 C, Ext. 3564.

Director, News Division: Rollen B. Kadesch, 5014 C, Ext. 3445.

Director of Mailing List, for distribution of releases and regulatory material: E. E. Vivian, 6225 C, Ext. 568 and 432.

NPA INDUSTRY OPERATIONS ASSIGNMENTS

Chemicals: Kenneth H. Klipstein, 2358 T, Ext. 4241.

Copper: Frank H. Hayes, Second Floor, Ext. 3318.

Iron & Steel: Richard F. Sentner, Second Floor NG, Ext. 4346-7.

Light Metals: Nigel H. Bell, Second Floor NG, Ext. 5631.

Miscellaneous Metals and Minerals: H. B. Sharp, Second Floor NG, Ext. 5071.

Rubber: Leland E. Spencer, Second Floor NG, Ext. 3134.

Tin, Lead and Zinc: Whitman W. Hopton, Second Floor NG, Ext. 4501.

Agricultural Equipment: A. King McCord, Third Floor NG, Ext. 5105.

Communications Equipment: Luther W. Hill, Fifth Floor E, Ext. 4128.

Construction and Mining Machinery: Neal Higgins, Third Floor NG, Ext. 4196.

Electrical Equipment: Bonnell W. Clark, Third Floor NG, Ext. 3256.

General Components: Samuel N. Comly, Third Floor NG, Ext. 5141.

Motor Vehicles: Courtney Johnson, Third Floor NG, Ext. 3472.

Consumers Durable Goods: Harry J. Holbrook, First Floor E, Ext. 3784.

Containers and Packaging: Charles A. Lewis, 105 OG, Ext. 3718.

Electronics Products: John G. Daly, Second Floor E, Ext. 3585.

Leather: Julius G. Schnitzer, 2230 T, Ext. 3639.

Machinery and General Industrial Equipment: Marshall M. Smith, Third Floor NG, Ext. 4687.

Motion Picture-Photographic Products: Nathan D. Golden, 3826 C, Ext. 3171.

Engines and Turbines: Charles Kells, Third Floor NG, Ext. 4202.

Printing and Publishing: Arthur R. Treanor, Fifth Floor E, Ext. 3295.

Technical Scientific Supplies: Howard Pringle, Fifth Floor E, Ext. 5904.

Textiles: A. Henry Thurston, 2007 T, Ext. 4097.

Railroad Equipment: Robert L. Glenn, Third Floor NG, Ext. 5184.

Building Materials: John L. Haynes, 326 OG, Ext. 3803.

Construction Controls: Rufe B. Newman, 319 OG, Ext. 3412.

NPA INDUSTRY DIVISIONS

The Industry Divisions of NPA are the principal points of contact for producers of "B" products who are affected by CMP directly or indirectly. They will handle allotments of controlled materials to these producers; and are the proper recipients for appeals and claims. The divisions are:

Agricultural Machinery and Implements.
Aircraft.
Aluminum and Magnesium.
Building Materials.
Chemicals.
Communications Equipment.
Construction and Mining Machinery.
Consumers Durable Goods.
Containers and Packaging.
Copper.
Electrical Equipment.
Electronics.
Engine and Turbine.
General Components.
General Industrial Equipment.
Iron and Steel.
Leather and Leather Products.
Lumber and Lumber Products.
Miscellaneous Metals and Minerals.
Motion Picture-Photographic Products.
Motor Vehicles.
Ordnance, and Shipbuilding.
Petroleum Administration for Defense.
Printing and Publishing.
Pulp, Paper and Paperboard.
Railroad Equipment.
Rubber.
Scientific and Technical Equipment.
Service Equipment.
Textile.
Tin, Lead and Zinc.

Industrial Expansion: William E. O'Brien, 331 OG, Ext. [illegible]45.

Loans: [illegible] M. Harper, 309 OG, Ext. 3558.

Tax Amortization: Ross A. Gridley, 338, OG, Ext. [illegible]

Aircraft: Joseph J. Mitchener, 1007 T, Ext. 5813.

Ordnance and Shipbuilding: W. C. Park, 2101 T-4, Ext. 5231.

Service Equipment: Cameron B. Lynham, 2150 T, Ext. 5892.

Lumber and Lumber Products: C. A. Bruce, 103 OG, Ext. 3707.

Pulp, Paper and Paper Board: Gabriel J. [illegible], 102 OG, Ext. 4732.

Consumer End Products: Leslie P. Doidge, 1409 T, Ext. 4609.

Materials for Consumer Goods: Isaac Q. Lord, 2215 T, Ext. 4901.

MRO Problems: Richard W. Murphy, 3830 C, Ext. 3754.

CMP Problems: John F. Skillman, 5008 C, Ext. 5291.

Salvage and Conservation Activities, such as the Ferrous Scrap Drive: A. E. Pierce, 2236 T, Ext. 4917.

NPA IRON & STEEL DIVISION

2nd Floor West, NG—STerling 5200

Director: Richard F. Sentner, Ext. 4346.

Deputy Director: W. B. Quail, Ext. 3281, 3282.

Assistant Director for Distribution: Herbert Johnson, Ext. 3510, 3520.

Assistant Director for Production: J. S. Smith Jr.

Assistant to the Director: Frank T. McCue, Ext. 3960, 3961, 3962.

Assistant Director in Charge of Facilities Expansion: R. J. Wysor, Ext. 3960, 3961, 3962.

Assistant Director in Charge of Ferroalloys: Dr. James H. Critchett, Ext. 4795, 4868; Roger Allen, Consultant, Ext. 3084.

Assistant Director in Charge of Metallurgy and Conservation: E. J. Hergenroether, Ext. 4868, 4795.

Wire Section: Norman Melville, Chief, Ext. 4656.

Tube Section: Jay W. Owings, Chief; Willis J. Resiner, Ext. 4037, 4038.

Pipe Section: J. S. Anderson, Chief; A. B. Schoen, Ext. 4037.

Priorities and Statistical Control Section: Kenneth H. Hunter, Chief, Ext. 3601, 3602.

Plant Expansion Section: H. L. Leyda, Ext. 4813.

Sheet and Strip Section: Merrick McCafferty; Milton Englert; William R. Nolan, Ext. 5991, 5992, 5993.

Bars and Semi-fin. Sections: Henry P. Rankin, Chief, George L. Anderson, Assistant Chief, Ext. 5011, 5012.

Warehouse Section: Russell Link, Chief; Charles Kramer, Ext. 3051, 5659.

Forgings Section: H. F. Weaver, Chief; J. E. Sweeney, Assistant Chief, Ext. 3004, 3005.

Castings Section: A. J. McDonald, Chief, Ext. 3080, 5891. Gray Iron & Malleable Castings: Francis J. Buckley, Ext. 5750, 5891.

Refractories and Fluxes Section: Mrs. Marguerite M. Sauers, Chief, Ext. 4017.

Ferroalloys Section: Frederick Franklin, Chief, Ext. 3756; W. D. Crawford, Ext. 5810; J. B. Edie, Ext. 3670; E. K. Jenckes, Ext. 5810; G. T. Motock, Ext. 3756; P. A. Reinertson, Ext. 4695.

Cobalt Section: E. F. Mochlin, Chief, Ext. 5810.

Manganese and Silicon Section: David A. Duff Jr., Chief, Ext. 4682.

Nickel Section: Harold Larsen, Chief, Ext. 4681-2; W. M. Alston, Ext. 4681-2; Frank R. Bailey, Ext. 4681; Oscar Haugham, Ext. 4681-2.

Pure Tungsten and Molybdenum Section: Sidney Schein, Chief, Ext. 4695; H. M. Lusk, Ext. 4695.

Alloy Steel Section: John J. Boylan, Chief, Ext. 5705-6; G. V. Bolger, Ext. 5705-6.

Cold Drawn Bar Section: Edward C. Koester, Ext. 5705-6; S. C. Rogers, Ext. 5705.

Scrap Section: Marvin S. Plant, Chief; Charles M. Brooks; John P. Voyer; Stuart J. Heiss; Ben H. Pritchard; Boyd Outman, Ext. 3780.

Stainless Steel Section: John S. Ewing, Chief, Ext. 4944, 4945.

Pig Iron Section: John A. Claussen, Chief, Ext. 4002.

Tool Steel Section: Felix Kremp, Chief, Ext. 5916.

Tin Plate Section: E. J. Sanne, Chief, Ext. 5008.

Structural Shapes Section: Thomas M. Dalby, Chief, Ext. 4011.

Plate Section: Max Hoffman, Chief; D. S. Wolcott, armor plate; Paul Landis; George W. Kirkley, Ext. 4947-9.

MRO Section: Frank A. Weidman, Chief, Ext. 4939.

Metallurgical and Conservation Branch Sections. Heat and Corrosion Resistant Steel: C. Conlin, Chief, Ext. 3606-7; Low Alloy Steel: J. R. England, Chief, Ext. 3606-7; Stainless and Super Alloy Steel: G. Sands, Chief, Ext. 3606-7; Tool Steel: George A. Barker Jr., Ext. 3607, 4956.

Program Section: Charles Halcomb, Chief, Ext. 4637-9.

Munitions Board Liaison Representative: Kenneth M. Heinrich, LIberty 5-6700, Ext. 75543.

NPA GENERAL INDUSTRIAL EQUIPMENT DIVISION

Third Floor NG—STerling 5200

Director: Marshall M. Smith, Ext. 4687-8.

Assistant Director: William L. Beck, Ext. 4629, 4602.

Machine Tool Section Chief: Col. P. L. Houser, Ext. 5857.

Machine Tool Section Assistant Chief: Paul S. Gaston, Ext. 5856.

Machine Tool Consultants: Payson Blanchard, Ext. 5908; Herbert L. Tigges, Ext. 3262; Robert M. Husband, Ext. 5909; E. J. Seifreat, Ext. 3263; Andrew G. Carey, Ext. 3262; Kent Mathias, Ext. 4803.

Metalworking Machinery: Thomas Shriver, Ext. 5708.

Field Services Director: Joe Willis, Ext. 4857.

Light Power-Driven Tools: Herbert A. Newman, Ext. 4855.

Necessity Certificates: Malcolm R. Sutherland, Ext. 4855.

Foundry Equipment and Supplies: Aubrey J. Grindle, Ext. 4804.

Cutting Tools: Wiley Buchanan, Ext. 4807, and Francis A. Kelly, Ext. 3395.

Abrasives: Ralph O. Anderson, Ext. 4779.

Welding Equipment: Dale D. Spoor, Ext. 4505.

Metal Forming Machinery: Paul Norris, Ext. 4807.

Pumps and Compressors: James Anderson, Ext. 5703.

Industrial Furnaces & Heating Equipment: Carl L. Ipsen, Ext. 4505.

Rolling Mill and Wire Drawing Equipment: Joseph C. Fitzgerald, Ext. 5140.

Printing and Publishing Machinery: George Cole, Ext. 5609.

Materials Handling Equipment: Joe H. Peritz, Ext. 3860.

Fork-Type Lift Trucks: Robert Scott, Ext. 3860.

Pulp & Paper Machinery: James A. Lawson, Ext. 5609, 5704.

NPA LIGHT METALS DIVISION

Second Floor NG—STerling 5200

Director: Nigel Bell, Ext. 5630, 5631.

Deputy Director: Timothy A. Lynch, Ext. 5630-1.

Assistant to Director: Herbert L. Cullen, Ext. 3597, 3971.

Chief, Requirements and Priorities Branch: Connor B. Batman, Ext. 3778, 5480.

Chief, Programs and Statistics Branch: S. W. Blumenheich, Ext. 3971, 3597.

Chief, Magnesium and Titanium Branch: Perry D. Helser, Ext. 5520.

Head, Warehouse Section: Theodore E. Boegr, Ext. 5036.

Head, Sheet Section: Robert T. Farrell, Ext. 3066.

Head, Castings Section: Lloyd A. Mapes, Ext. 3610.

Head, Army Requirements Section: Augustus Martin, Ext. 5550.

Head, Navy Requirements Section: La Touche E. W. Digges, Ext. 5036.

Head, Air Force Requirements Section: George F. Mahoney, Ext. 5036.

Head, Non-Military Government Requirements Section: Robert E. Heffernan, Ext. 3066.

Head, Extrusion Section: Paul E. Horsch, Ext. 5036.

Facilities and Construction Section: Bailey P. Byars, Ext. 3610, and J. K. Thompson, Ext. 3610.

Progress and Statistics Branch: George Pagonis, Ext. 5844.

Metallurgical Uses of Aluminum: John C. West, Ext. 5036.

Commodity Industry Analysis: Alfred S. Dubinsky, Ext. 5603; William E. Fitch, Ext. 5603; Harwood Otto, Ext. 4263; Thomas A. Ritchie, Ext. 5549; R. B. Taylor, Ext. 3610.

Consultant: Jacob B. Neiman, Ext. 5631.

NPA COPPER DIVISION

Second Floor West NG—STerling 5200

Acting Director: Frank H. Hayes, Ext. 3318.

Deputy Director: Joseph W. Mullally, Ext. 3275, 3276.

Assistant Director: A. A. Meyrowitz, Ext. 5922, 5923.

Assistants: Lenox C. Che, Ext. 3943; Paul Andrews, Ext. 4920; Lionel T. Bonner, Ext. 4607; William F. Cox, Ext. 3944; Frank Spitale, Ext. 4924; George F. Divine, Ext. 4924; Glenn E. Rolston, Ext. 5924.

NPA TIN, LEAD AND ZINC DIVISION

Second Floor NG—STerling 5200

Director: Whitman W. Hopton, Ext. 4501.

Tin: Erwin Vogelsang, Ext. 5363; W. L. Raup Jr., Ext. 3166; Robert Hough, Ext. 3167.

Zinc: Maurice Marcotte, Ext. 3016.

Zinc and Cadmium: Mrs. Margaret Murphy, Ext. 3015; John Sellon, Ext. 4022.

Lead: Arthur Cavanaugh, Ext. 3930.

Bismuth: George Tweedy, Ext. 3929.

Programs and Statistics: Herbert O. Rogers, Ext. 2436.

NPA MISCELLANEOUS METALS AND MINERALS DIVISION

Second Floor West, NG—STerling 5200

Acting Director: Harvey B. Sharpe, Ext. 5071.

Assistants: John E. Steinhauer, Ext. 3091; Mary E. Lubig, Ext. 3091.

NPA OFFICE OF SMALL BUSINESS

STerling 5200

Director: John C. Pritchard, 3312 C, Ext. 3561.

Assistant to the Director: C. F. Hughitt, 1410 T, Ext. 5613.

Government Procurement Information: Dan R. Hudson, 1457 T, Ext. 5600; and Ernest W. Reisner, 1450 T, Ext. 3011.

Assistance on Scarce Materials: Philip Bennett, 1431 T, Ext. 4619.

Assistance on Management Problems: Wilford L. White, 1440 T, Ext. 4805.

Assistance on Financial and Taxation Problems: J. C. Dockeray, 1440 T, Ext. 4806.

Assistance on Organizing Contracting Pools: W. O. Metcalf, 1323 T, Ext. 4615.

Questions and Answers on CMP

TEN QUESTIONS asked most frequently about the Controlled Materials Plan are reproduced here with their answers.

1. Must I file a separate CMP-4B application for each product that I make?

The Official CMP Class B Product List is divided into product classes under a code number heading. All products manufactured within one product class require only one 4B application. A separate application must be made for each separate product class produced.

2. Is there a small order provision which exempts users of small quantities of controlled materials from CMP?

On the instruction sheet for preparing Form CMP-4B are shown the minimum requirements below which a manufacturer need not apply. These are: Carbon steel, 5 tons; alloy steel, ½ ton; stainless steel, none; copper and copper-base alloy, 500 pounds; aluminum, 500 pounds. If his requirements for any one of these controlled materials are higher than the minimum figure shown above, he must file for all his requirements. Direction 1 to CMP Reg. 1 covers this situation.

3. Will the existing DO numbers for programs now rated be used? For instance: DO-87 for farm equipment; DO-48 for petroleum; DO-63 for steel shipping containers, etc.?

As DO orders are validated with allotment numbers, the claimant agency symbol and allotment number will be used following the DO.

4. Should manufacturers use a letter of transmittal with their CMP application forms in order to explain any special circumstances in their case?

By all means. The more detail that can be attached to the application form, the more accurately can the analyst handle the application.

5. If a manufacturer's present inventory of a controlled material is below the permissible limit, can he add inventory requirements to his production requirements in his CMP application to bring the inventory up to permitted levels?

No. But he may schedule deliveries of materials he needs in such a manner as to provide an adequate working inventory.

6. What is done about non-controlled materials, such as zinc, under CMP?

A Divisional Requirements Committee operating in each NPA Industry Division is required to check the availability of materials other than controlled materials to complete its programs, before presenting the requirements to the main Requirements Committee of DPA. In this manner all critical materials will be checked for availability before the Requirements Committee allots the necessary controlled materials. Such non-controlled materials will be obtained by the use of a DO rating under CMP.

7. I cannot find the product I make in the Product Assignment Directory and Official CMP Class B Product List. What should I do?

Write to the proper NPA Industry Division, unless you are making a Class A product, such as forgings or stampings.

8. A manufacturer of a Class A product requires a Class B product to be physically incorporated in his Class A product, and he produces the Class B product in his own shop. How does he obtain his material?

A person manufacturing a Class B product to be incorporated in a Class A product which he also manufactures must file a separate application on Form CMP-4B for material to manufacture the Class B product, just as though he were manufacturing the Class B product for another manufacturer.

9. The instructions for preparing Form CMP-4B state: "You may disregard the base use restrictions of NPA Orders M-7 and M-12." Why is this statement made?

Even though the manufacturer is operating under ceiling restrictions imposed by M-7 and M-12, the government wants to know the actual demand for the product he is making. The government may allot in certain cases for more production than M-7 or M-12 currently permit, in which case M-7 and M-12 will be amended.

10. In the instruction sheet for the CMP-4A Form in Section III, Column (a), we are told to include the material required for forgings, but in Items 17 and 32 in Section III of the form it says: "(Do not include forgings)." Where should forging requirements be shown?

You should include the rough stock weight required for your forgings in the shape of billets or bars in Items 17 and 26 on the application form. The government does not want to know the finished weight of the forgings themselves.

Get Help from NPA Field Offices

Here's where you can take your CMP problems. They're the field offices of the National Production Authority, U. S. Department of Commerce.

ALABAMA

Birmingham
731 Frank Nelson Bldg.
Second Ave. & 20th St.
Paul W. Jones,
District Manager

Mobile
308 Federal Bldg.
109-13 St. Joseph St.
Malcolm Laws,
District Manager

ARIZONA

Phoenix
District Office
808 N. First St.
Ernest C. Corbell,
District Manager

ARKANSAS

Little Rock
204 Guardian Bldg.
309 Center St.
John E. Buxton,
District Manager

CALIFORNIA

Los Angeles
1546 U. S. Post Office & Court House
312 N. Spring St.
Edwin Bates,
District Manager

Sacramento
1330 Jay St.

San Diego
2nd Floor Chamber of Commerce Bldg.
435 W. Broadway
Arthur C. Johnson,
District Manager

San Francisco
315 Flood Bldg.
870 Market St.
John J. Judge,
Regional Director

COLORADO

Denver
142 New Custom House
19th & Stout St.
Chas. E. Brokaw,
Regional Director

CONNECTICUT

Bridgeport
Barnam Thompson Bldg.
177 State St.
Blake C. Moore,
Industrial Analyst in Charge

Hartford
224 Post Office Bldg.
135 High St.
Frank J. Madden Jr.,
District Manager

New Haven
Temple Bldg.
125 Temple St.
Frank L. McDermott,
District Manager

DELAWARE

Wilmington
411 Pennsylvania Bldg.
Front & French Sts.
Robert C. Powell,
District Manager

FLORIDA

Jacksonville
425 Federal Bldg.
311 W. Monroe St.
William A. Dunlap,
District Manager

Miami
947 Seybold Bldg.
36 N. E. First St.
Marion A. Leonard,
District Manager

Tampa
308 Wallace S. Bldg. Annex
608 Tampa St.
Charles Muirhead,
District Manager

GEORGIA

Atlanta
418 Atlanta National Bldg.
50 Whitehall St. S.W.
Merrill C. Lofton,
Regional Director

Augusta
210 Maxwell House
1002 Green St.
Frederick G. Wood,
Acting District Manager

Savannah
218 U. S. Court House & Post Office Bldg.
125-29 Bull St.
Joseph G. Stovall,
District Manager

IDAHO

Boise
251 Sonna Bldg.
9th and Main Sts.
James H. Hawley Jr.,
Acting District Manager

ILLINOIS

Chicago
1763 La Salle-Wacker Bldg.
221 N. La Salle St.
George C. Payne,
Regional Director

Decatur
102 Decatur Club Bldg.
Paul J. Fields,
District Manager

Peoria
324 Commercial National Bank Bldg.
Wesley C. Heppard,
District Manager

Rockford
502 Cutler Bldg.
301 S. Main St.
Frank G. Bastable,
District Manager

INDIANA

Evansville
Claremont Bldg.
127 Locust St.
Albert G. Schmidt,
District Manager

Ft. Wayne
507 Strauss Bldg.
809 S. Calhoun St.
Walter C. Vetter,
District Manager

Indianapolis
Suite 410
224 N. Meridian St.
William F. Righter,
District Manager

IOWA

Davenport
310 Kahl Bldg.
Third at Ripley St.
Hal P. McCarthy,
District Manager

Des Moines
601 Securities Bldg.
418 Seventh St.
John H. Bickert,
District Manager

KANSAS

Wichita
212 E. Waterman St.
Glenn A. Weaver,
District Manager

KENTUCKY

Louisville
631 Federal Bldg.
Prentiss M. Terry,
District Manager

Paducah
713 Kentucky Ave.
George F. Backer,
Industrial Analyst in Charge

LOUISIANA

New Orleans
1508 Masonic Temple Bldg.
333 St. Charles Ave.
Harold C. Jackson,
District Manager

Shreveport
Belmont Bldg.
404½ Marshall St.
Ray D. Saunders,
District Manager

MAINE

Portland
410 Chapman Bldg.
477 Congress St.
John R. Fortin,
District Manager

MARYLAND

Baltimore
312 Court Square Bldg.
200 E. Lexington St.
John Weber,
District Manager

MASSACHUSETTS

Boston
40 Broad St.
Paul G. Carney,
Regional Director

Springfield
216 Hampden Bldg.
1634 Main St.
Charles J. Diamond,
District Manager

Worcester
201 Dean Bldg.
107 Front St.
George W. Grebenstein,
District Manager

MICHIGAN

Detroit
1038 Federal Bldg.
230 W. Fort St.
William T. Hunt,
District Manager

Grand Rapids
Davenport Institute
4 Fulton St. East
George R. Petrie,
District Manager

MINNESOTA

Duluth
325 U. S. Post Office
Russell G. Barnes,
District Manager

Minneapolis
207 Minnesota Federal Savings & Loan Bldg.
607 Marquette Ave.
Silas M. Bryan,
Regional Director

MISSISSIPPI

Jackson
205 Fidelity Bldg.
426 Yazoo St.
Erwin L. Gulledge,
District Manager

MISSOURI

Kansas City
2400 Fidelity Bldg.
911 Walnut St.
Kenneth V. James,
Regional Director

St. Louis
910 New Federal Bldg.
1114 Market St.
Clyde Miller,
District Manager

MONTANA

Butte
306 Federal Bldg.
William G. Maloney,
District Manager

NEBRASKA

Omaha
502 W. O. W. Bldg.
1319 Farnam St.
Marvin K. Hicks,
Acting District Manager

NEVADA

Reno
1479 Wells Ave.
Ben Maffi,
District Manager

NEW HAMPSHIRE

Manchester
315 Beacon Bldg.
814 Elm St.
Emile P. Grenier,
District Manager

NEW JERSEY

Newark
8 Halsey St.
Frank W. Corbally,
District Manager

Trenton
306 Old Post Office Bldg.
E. State & Montgomery St.
Henry A. Ludeke,
District Manager

NEW MEXICO

Albuquerque
Hanosh Bldg.
203 W. Gold Ave.
Thomas L. Moore,
District Manager

NEW YORK

Albany
61 Columbia St.
Richard E. Wheeler,
District Manager

Buffalo
501 Federal Bldg.
117 Ellicott St
John J. Love,
District Manager

New York
12 Broadway
John F. McKiernan,
Regional Director

Rochester
819 Commerce Bldg.
119 E. Main St.
John F. Noonan,
District Manager

Syracuse
918 Chimes Bldg.
N. Onondaga & S. Salina
St.
William M. Henry,
District Manager

Utica
115 S. Geneser
Robert H. Schaub,
District Manager

NORTH CAROLINA

Charlotte
Lloyd Bldg.
Edward W. Witt,
District Manager

Raleigh
3-F State Capitol Life
Insurance Bldg.
2620 Hillsboro St.
Alfonso C. Jolliff,
District Manager

NORTH DAKOTA

Fargo
207 Walker Bldg.
621 First Ave. North
Robert N. Huey,
Acting District Manager

OHIO

Cincinnati
1404 Federal Reserve Bank
Bldg.
105 W. Fourth St.
Robert M. Luckey,
District Manager

Cleveland
410 Union Commerce Bldg.
925 Euclid Ave.
George A. Moore,
Regional Director

Columbus
312 Trautman Bldg.
209 S. High St.
John A. Burk,
District Manager

Dayton
1600 U. B. Building
Fourth and Main St
Clifford E. Finley,
Industrial Analyst
in Charge

Toledo
Chamber of Comerce Bldg.
218 Huron St.
Darrell J. Dunkle,
District Manager

OKLAHOMA

Oklahoma City
311 Council Bldg.
102 N. W. Third
George R. Phillips,
District Manager

Tulsa
304 Wright Bldg.
115 W. Third St.
Charles Saville,
Acting District Manager

OREGON

Portland
217 Old U. S. Court House
520 S. W. Morrison St.
Ralph W. Sullivan,
District Manager

PENNSYLVANIA

Erie
200 Erie Commerce Bldg.
Twelfth and State Sts.
Ralph W. DeLancey,
District Manager

Harrisburg
Columbus Hotel Bldg.
229 Walnut St.
Edward D. Harris,
District Manager

Philadelphia
Jefferson Bldg.
1015 Chestnut St.
William M. Park,
Deputy Regional Director

Pittsburgh
1021 Clark Bldg.
717 Liberty Ave.
Charles A. Carpenter,
District Manager

Scranton
4th Floor Select Bldg.
116 N. Washington St.
John F. Conaboy,
District Manager

Wilkes-Barre (Kingston)
202 Pool Bldg.
303 Market St.
Peter J. Potochney,
District Manager

RHODE ISLAND

Providence
327 Post Office Annex
Herbert J. Denner,
District Manager

SOUTH CAROLINA

Aiken
1833 Curve St.
Russell H. Stokes,
Industrial Analyst in
Charge

Barnwell
County Office Bldg.
John R. Hayes,
Industrial Analyst
in Charge

Charleston
6 Hudson St.
C. W. Martin,
District Manager

Columbia
116 Palmetto State
Life Bldg.
1310 Lady St.
William B. Worthy,
District Manager

SOUTH DAKOTA

Sioux Falls
226 Gas Company Bldg.
114 S. Main Ave.
Vincent E. Montgomery,
District Manager

TENNESSEE

Chattanooga
719 James Bldg.
Eighth & Broad St.
Albert B. Clark,
District Manager

Knoxville
247 Daylight Bldg.
501 Union Ave.
Lucien C. Greene,
District Manager

Memphis
229 Federal Bldg.
John M. Fowler,
District Manager

Nashville
410 Nashville Trust Bldg.
315 Union St.
Joseph C. Carlin,
District Manager

TEXAS

Dallas
Room 1114
1114 Commerce St.
Ernest L. Tutt,
Regional Director

El Paso
Chamber of Commerce
Bldg.
310 San Francisco St.
Thomas U. Purcell,
District Manager

Houston
602 Federal Office Bldg.
Warren G. Brown,
District Manager

Lubbock
Cotton Exchange Bldg.
1005½ 13th St.
Alexander C. Jackson,
District Manager

San Antonio
518 Bedell Bldg.
118 Broadway
George L. Malherbe,
District Manager

UTAH

Salt Lake City
528 Dooly Bldg.
109 W. Second St. So.
Kenneth B. Dyer,
District Manager

VERMONT

Montpelier
2nd Floor Willard Bock
Bldg.
79 Main St.
Daniel P. Healey,
District Manager

VIRGINIA

Norfolk
301 Duke York B
610 Duke St.
James M. McEl
District Manager

Richmond
Room 2, Mezzani
801 E. Broad St
C. Roy Mundee,
Regional Director

Roanoke
311 Liberty Trust Bldg.
101 Jefferson St.
Frederick L. Shel Jr.
Industrial Analyst in
Charge

WASHINGTON

Seattle
809 Federal Office Bldg.
909 First Ave.
Philip M. Crawford,
Regional Director

Spokane
305 Columbia Bldg.
107 Howard St.
Roger O. Oscarson,
Acting District Manager

WEST VIRGINIA

Charleston
612 Virginia St.
Chas. W. Massie,
District Manager

WISCONSIN

Appleton
214 N. Superior St.
Herbert C. Crane,
District Manager

Eau Claire
401 S. Barstow St.
Russell O. Gunderson,
Acting District Manager

Milwaukee
700 Federal Bldg.
517 E. Wisconsin Ave.
John G. Desmond,
District Manager

WYOMING

Cheyenne
410 Fed. Office Bldg.
21st St. & Carey Ave.
Albert B. Kahn,
District Manager

HAWAII

Honolulu
Dillingham Bldg.
Fred R. Kingman,
District Manager

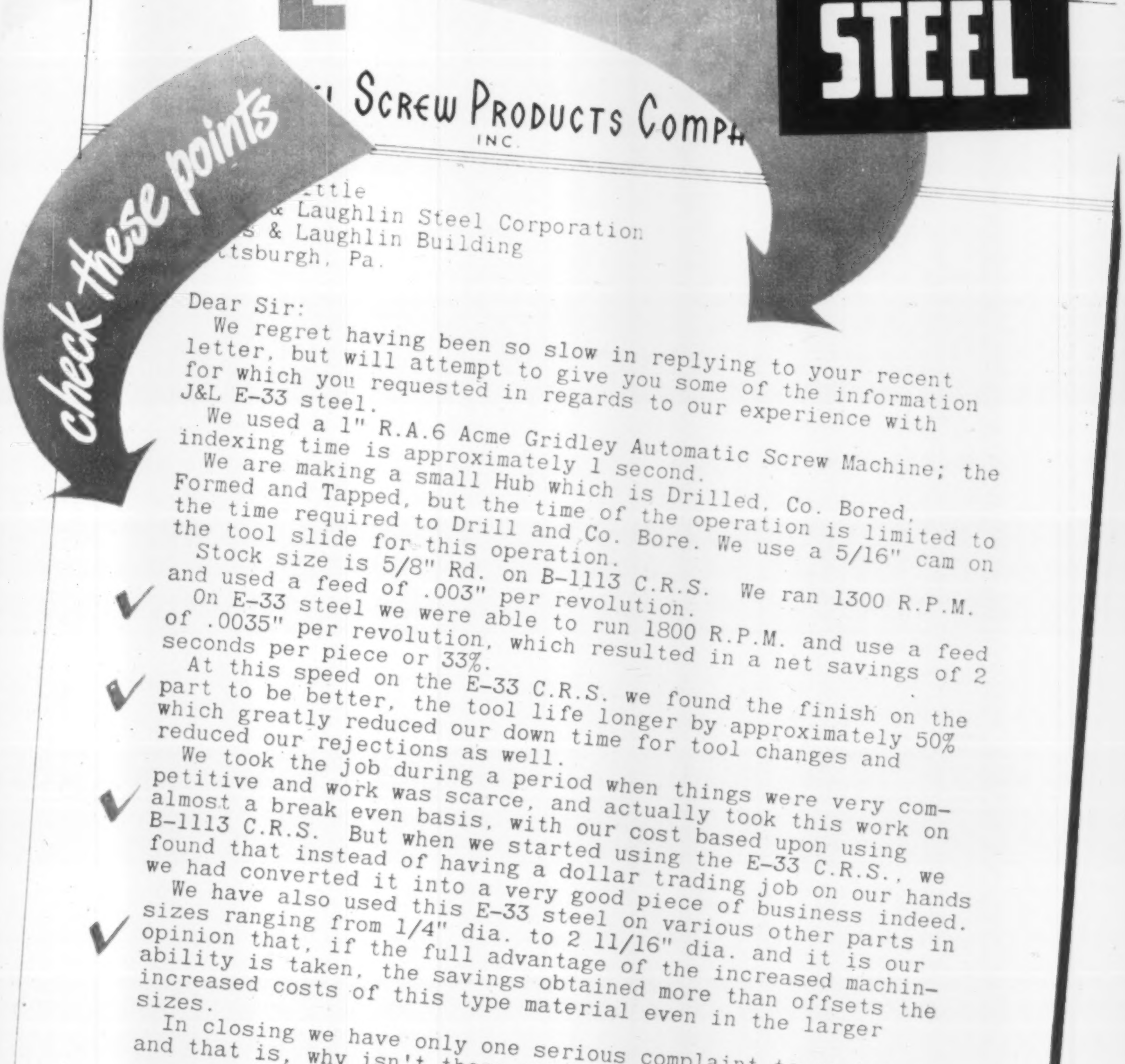
PUERTO RICO

San Juan
2 Puerto Rican Reconstruction Admin. Ground
Building N
Harold Lockheimer,
District Manager

This 32-page guide on the Controlled Materials Plan was compiled by STEEL as a handy reference and instruction book for the metalworking and metalproducing industries. For changes and revisions, readers should consult STEEL's news pages, particularly "Checklist on Controls," each week.

READ THIS LETTER FROM A TYPICAL "E" STEEL CUSTOMER

J&L STEEL


check these points

l Screw Products Compa
INC.

ittle
& Laughlin Steel Corporation
s & Laughlin Building
ttsburgh, Pa.

Dear Sir:

We regret having been so slow in replying to your recent letter, but will attempt to give you some of the information for which you requested in regards to our experience with J&L E-33 steel.

We used a 1" R.A.6 Acme Gridley Automatic Screw Machine; the indexing time is approximately 1 second.

We are making a small Hub which is Drilled, Co. Bored, Formed and Tapped, but the time of the operation is limited to the time required to Drill and Co. Bore. We use a 5/16" cam on the tool slide for this operation.

Stock size is 5/8" Rd. on B-1113 C.R.S. We ran 1300 R.P.M. and used a feed of .003" per revolution.

✓ On E-33 steel we were able to run 1800 R.P.M. and use a feed of .0035" per revolution, which resulted in a net savings of 2 seconds per piece or 33%.

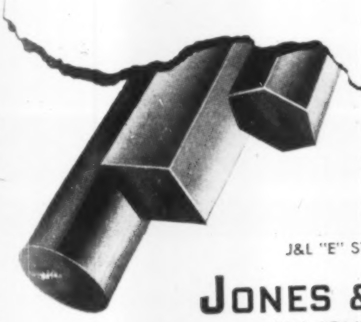
✓ At this speed on the E-33 C.R.S. we found the finish on the part to be better, the tool life longer by approximately 50% which greatly reduced our down time for tool changes and reduced our rejections as well.

✓ We took the job during a period when things were very competitive and work was scarce, and actually took this work on almost a break even basis, with our cost based upon using B-1113 C.R.S. But when we started using the E-33 C.R.S., we found that instead of having a dollar trading job on our hands we had converted it into a very good piece of business indeed.

✓ We have also used this E-33 steel on various other parts in sizes ranging from 1/4" dia. to 2 11/16" dia. and it is our opinion that, if the full advantage of the increased machinability is taken, the savings obtained more than offsets the increased costs of this type material even in the larger sizes.

In closing we have only one serious complaint to register and that is, why isn't there more of it available?

Very truly yours,



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Windows of Washington

By E. C. KREUTZBERG *Washington Editor*

Industry men serving defense agencies without compensation in shaky position as Justice Department emphasizes DPA regulations governing personnel

INDUSTRY men serving the government without compensation as members of defense agency staffs or in advisory committees are having their troubles in Washington. These troubles arise from Justice Department regulations covering the employment of personnel. Justice is leaning over backwards to prevent private companies benefitting in defense work by reason of having employees in defense agencies.

So seriously does the Office of Price Stabilization regard Justice warnings that it has started to wield the ax on industry men who work for it on a part-time basis. Despite OPS's crying need for competent men with experience in industry pricing problems, it has severed five such men from its Industrial. Materials and Manufactured Goods Division. They have been invited to continue in an advisory capacity but no longer may act as representatives of the government.

Out—One is Carl K. Lenz, president, Kennecott Copper Corp., New York, who was chief of the Copper Section, Metals Branch. The others were consultants in the Castings Section who served, respectively, as specialists on malleable, steel, gray iron and die castings: Ralph N. Cole, president, Canton Malleable Iron Co., Canton, O.; Lawrence C. Mertz, vice president, Unicast Corp., Toledo, O.; Ralph L. Lee, secretary-treasurer, Grede Foundries Inc., Milwaukee; and Joseph L. O'Brien, sales manager, Doehler-Jarvis Co., Chicago.

All were servicing OPS on a WOC (without compensation) basis but were working part-time in their OPS jobs and part-time in their jobs back home. They were removed from OPS rolls to conform with the following rules:

1. So far as possible, operations under the Defense Production Act shall be carried on by full-time, salaried employees of the government.

2. In the appointment of personnel and in assignment of their duties, the head of the department or agency shall take steps to avoid, to as great an extent as possible, any conflict between the governmental duties and the private interests of such personnel.

Pensioners Suspect—Under these rules even the propriety of employing men who have retired from private industry and are receiving pensions from their former employers is questioned.

Can such men ever hope to escape being targets for charges that they have favored their former employers?

Government personnel men admit that this policy adds to the difficulty of manning defense agencies with men of industry experience and they confess that it invites hiring persons of less competence in the handling of industry problems.

New Deal For Salaries?

A NEW POLICY for salary increases—not tied to basic wage regulations—has been proposed to Economic Stabilizer Eric Johnston in a report by Joseph D. Cooper, executive director of the new Salary Stabilization Board.

Stressed in the report is the theme that there will be equal treatment for wages and salaries. The latter have been governed since Jan. 26 by the basic wage regulations.

Whenever possible businessmen won't need prior approval by SSB before raising salaries, but their action would be subject to later review by the salary fixers.

Advisers' Status in Question—The present use of industry advisory committees by the defense agencies has aroused even more dissatisfaction on the part of the Justice Department. This situation was thoroughly aired by H. Graham Morison, assistant attorney general in charge of the Antitrust Division, in a hearing of the Celler Monopoly Subcommittee, House Judiciary Committee.

"Committees have met without benefit of a government chairman," said Mr. Morison. "Government representatives have lacked proper qualifications. Agenda have been prepared and meetings have been called by industry rather than by the department or agency concerned. Subcommittees, panels and other subgroups have not adhered to the requirements established . . . Many committees, rather than being advisory, have made decisions and exercised functions which properly should reside exclusively in government officials.

"If these things continue, the industry advisory committee will suffer."

There are thousands of these industry advisory committees in existence. For these committees to function legally, he said, the minimum requirements are:

1. There must be statutory authority for the employment of such a committee or there must be an administrative finding that it is necessary to utilize such committees to perform certain statutory duties.

2. The agenda for such committees and their meetings must be initiated and formulated by the government.

3. The meetings to be held must be at the call of and under the chairmanship of full-time government officials.

4. Full and complete minutes of each meeting must be kept.

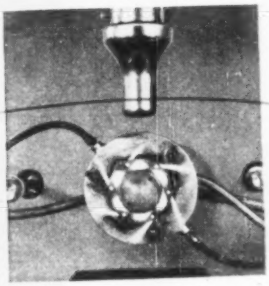
5. The functions of such committees must be purely advisory and any determination of action to be taken must be made solely by government representatives.

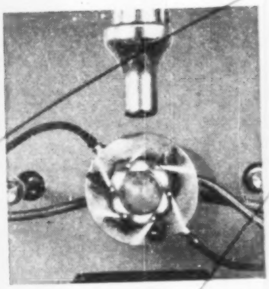
Munitions Board Changes—An interesting exception to the Justice Department view was expressed to the Celler subcommittee by Leonard Niederlehner, general counsel of the Munitions Board. Mr. Niederlehner insisted that because Munitions Board committees only serve the government by giving advice there is no need for a statutory basis for these committees.

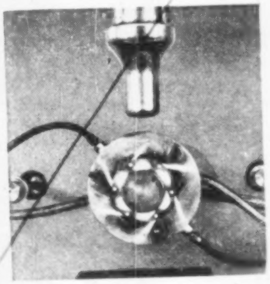
Despite this dissenting opinion, the Celler group was told by J. D. Small, chairman of the Munitions Board, that the board, as of June 6, 1951, switched to a policy of appointing only full-time government employees as chairmen serving industry advisory committees.

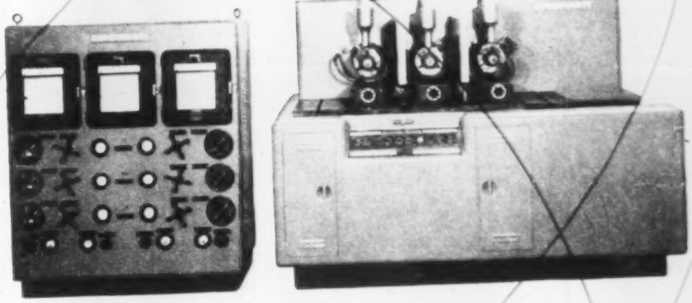
Before that date it had been a custom to name as the chairman of a committee the apparently best qualified man—and such men usually were selected from industry.

The move to oust industry men which has begun in the OPS has not yet shown up at the National Production Authority. Industry men, usually on a WOC basis, are the warp and woof of the NPA and any wholesale dismissal of industry men would come close to destroying that agency.









three heads: four advantages

Multiple-spindle Cincinnati Flamatic hardening machines—a product of applied heat engineering in the Cincinnati Flamatic Laboratory – offer important advantages which this automotive cam job illustrates very well. Triple production is the obvious one. Labor saving (one operator loads three heads) is another. Floor space, too, is saved—one machine does the work of three. The fourth is flexibility. Because each head functions independently, the machine can be set up to run different parts simultaneously, and keep in step with quickly changing production requirements. Flamatic selective surface hardening, with electronic control, is making important contributions to industrial mobilization. Whatever your surface hardening problems, you'll do well to bring them to the Cincinnati Flamatic Laboratory. Write for new catalog, Publication No. M-1724.

Six lobes of this internal cam are simultaneously h[illegible] ened by Flamatic [illegible] to 200 [illegible] for [illegible] approximately three times that on the 3 spindle mach

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More Currency Tinkering in Europe?

West European nations may appreciate the value of their money as a curb against inflation. Pressure for the step mounts as import costs soar

RISING prices for raw materials is putting new pressure on European nations to appreciate their currencies in terms of the U. S. dollar. That action to curb inflation was recommended by the secretariat of the United Nations Economic Commission for Europe.

Rising raw material prices increased Britain's import bill in May to a new high of $946.9 million from $872 million in April. Last month's imports were $135 million above the average for the first four months of 1951, bringing the total for the January-May period to $4193 million. That's equivalent to an annual rate 38 per cent above 1950.

The Gap Widens — With exports lagging, the margin of imports over exports in the first five months rose to $1125 million, which is more than the margin for all of 1950—$974 million. May exports were $643 million, slightly below April, and re-exports totaled $31 million. Total exports for the first five months of 1951 were $3068—equivalent to an annual rate of $7361 million or 17 per cent above the 1950 total.

Increasing the value of European currencies would decrease prices on raw materials imported from non-European sources. Because some of those raw material producing nations might also appreciate their currencies, ECE estimates that the fall in the average level of Europe's overseas import prices would be roughly two-thirds as great as the percentage reduction in European rates on the dollar corresponding to a given degree of currency appreciation. Most world raw material prices are closely tied to the dollar because of America's overwhelming weight as a purchaser.

Factors Against—A move to appreciate currencies would raise export prices and might lose Europeans some of the U. S. markets. But ECE points out between the lines that this is a sellers' market and the market losses would be slight and would be offset by a balance of export-import payments. ECE says that a collapse in raw material prices would relieve the situation, but the agency sees little hope for a widespread decline despite the drop in tin, rubber and wool quotations. Those decreases have thus far done little more than wipe out the increases that have occurred since the end of 1950.

Virtually every European country is experiencing inflation and the threat of further inflation. The problem is the most serious in countries which are the most heavily dependent on international trade and hence susceptible to price influences from the outside. Since September, 1950, the upward movement of prices has increased in violence and scope. The typical rate of increase up to early 1951 has been from 2 to 4 per cent per month for import and wholesale prices and from 1 to 2 per cent per month for the cost of living.

From the Inside — Those outside factors are playing havoc with Europe's price structure, and inside forces are adding to the confusion, too. Defense spending, although not on a scale comparable with that in the U. S., will be an increasingly serious inflationary pressure from now on. Europe, excluding Russia, is going to spend in 1951 the equivalent of some 14 or 15 million industrial man-years on defense, or about 50 per cent more than in 1949.

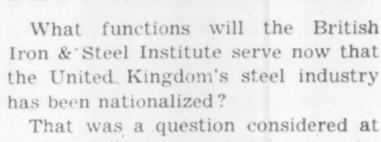
In most countries the increased claims on the national product arising from additional armaments expenditures, and in some cases also from the adverse effect of the changed price relationships in foreign trade, are unlikely to be offset by increased production because of industrial disturbances likely to arise from shortage of raw materials and shifts in production from civilian to military goods. For countries now embarking on heavy armament programs, ECE says, the increase in civilian consumption and investment will be extremely small at best, and in some countries there may be an absolute reduction in the standard of living.

Since those adjustments are to take place at a time when the structure of prices and incomes has already been disturbed, the possibility of achieving them without further inflations seems, to the ECE secretariat, "highly remote."

BISI Ponders Fate Under Nationalization

What functions will the British Iron & Steel Institute serve now that the United Kingdom's steel industry has been nationalized?

That was a question considered at the latest meeting of the group by Richard Mather, new institute president and chairman and managing director of Skinningrove Iron Co. Ltd. He pointed out that membership in the organization has always been on an individual rather than a company basis and that activities have always been concentrated on the technological aspects of steelmaking. The institute will probably emphasize increasingly technical developments and may evolve into a purely engineering society.



RICHARD MATHER
. . . *new president, BISI*

The institute was established in 1869 on the initiative of a group of iron masters in northern England. It was open to all nationalities, and the first overseas member was a Thomas Blair of Pittsburgh. Even office-holding was not limited to British members, and Andrew Carnegie once served as president.

As of last Dec. 31, the association had 4882 members, including 1236 from overseas.

Alan Wood Celebrates 125th

Alan Wood Steel Co., Conshohocken, Pa., celebrates the 125th anniversary of its founding in July. Located on the banks of the Schuylkill River twenty miles northwest of Philadelphia, the plant, consisting of coke ovens, blast furnaces, open hearths, rolling mills, metallurgical laboratory and offices, extends over 300 acres. In addition, Alan Wood has iron ore mines in New Jersey.

Expenditures for additions and improvements in 1950 exceeded $2.5 million making a total of $21 million spent for expansion in the last five years. Recent addition is a 30-inch hot strip mill which cost $9 million.

John T. Whiting, president, is confident of his company's future despite the construction of large steel plants in the general Philadelphia area. He says Alan Wood's competitive position will not be endangered because steel consumption has widely exceeded local production. Alan Wood will continue emphasis on the production of specialties, and the output of the new mills will not be in competition with the specialty products. Substantial proportion of the company's sales comprise small orders for fabrication and warehouse distribution of a quantity, quality or shape not generally attractive to larger mills.

Record Metal Tonnages Shipped

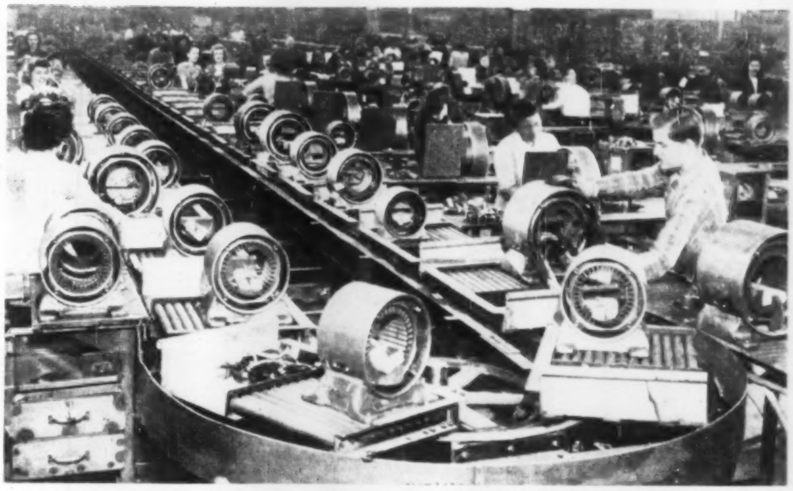
About 93 million net tons of metals in all forms were shipped by domestic producers to consumers in 1950, according to an estimate by American Iron & Steel Institute. That was a record tonnage, of which all but 4 per cent was used in the U. S.

In that total of foundry and mill products of the major commercial metals, 72.2 million tons was finished steel, such as sheets, pipe, bars, rails and other items. Cast ferrous products amounted to more than 15 million tons, according to the Bureau of the Census. Only a small portion of that tonnage is turned out by producers of steel ingots, the bulk being made by thousands of foundries. But the pig iron for those castings, constituting about one-third of the ferrous materials for foundry use, comes from the iron and steel industry. The industry shipped more than 5 million tons of pig iron to foundries last year.

The third segment of the country's metal product supplies was produced mainly by four industries: Aluminum, copper and brass, lead and zinc. They accounted for 5.1 million tons, or 5.5 per cent of total shipments. But some of those four nonferrous metals are included as alloys or coatings in the 72.2 million tons of steel. If those tonnages are transferred from steel to the nonferrous category, the latter becomes about 5.6 million tons.

Tungsten Facilities Planned

Plans for the construction of a tungsten processing unit in the Rye Patch mining district near Winnemucca, Nev., have been announced by officials of the Winnemucca Mountain Mines Co. Plans call for a conversion of the company's pilot mill to a 50-ton mill for installation of the tungsten processing unit.



MERRY-GO-ROUND: This 32-feet-per-minute carousel conveyor in the Westinghouse Electric Co.'s Buffalo Works distributes Life-Line motor frames, slot-cell insulation, stator coils, face insulation and wedges to winding positions. Stator carriers on conveyor have rollers for easy transfer by workers as needed

Orienting Unit Crystals

New York physicist has technique that may mean greater versatility for metals

A NEW YORK consulting physicist has developed a process that may bring greater versatility to metals, particularly steel. Isaac M. Diller has patents pending on a process for the improvement of properties of metals through unit crystal orientation.

A $2 million plant could treat about 500 tons of material daily. Material may be processed in billet or finished form, or even after the end product has been fabricated. Economics and convenience dictate when the material should be processed, although it must be done before heat treating.

The Theory — The new process is based on the theory that when the unit crystals are in the closest contact with no angle between them, the force holding one unit crystal to the other is comparable to that of the binding forces among the atoms in the unit crystal. A unit crystal is the smallest number of atoms arranged into a crystal lattice.

The new process is designed to improve on the random orientation of the unit crystals. The random orientation in iron is the equivalent of 3 per cent of perfect orientation. The Diller process boosts that to the equivalent of 6 per cent of perfection—and doubles the strength of the metal, without increasing the hardness. Heat treating strengthens metal, but it also makes it harder, or more brittle. Metal may be heat treated after the Diller process.

New Strength—Mr. Diller says that his process will make available steel with hitherto impractical strengths of 300,000 to 400,000 psi. Unalloyed castings would be strong enough to use in place of alloy types. He says it will improve the fatigue and tensile strengths of metals and will permit the use of steels in aircraft which heretofore could not stand the high temperatures of modern aviation.

The extent of improvement in strength will range mostly between 50 and 150 per cent. The effect of heavy working operations, both hot and cold, is not known, but a slight decline in strength gains under those conditions is expected because unit crystals will probably be disrupted a little in ponderous operations, such as heavy forging.

Wendt-Sonis Doubles Space

Underway at Wendt-Sonis Co., Hannibal, Mo., is an extensive plant expansion program that will approximately double productive area for making carbide tipped cutting tools. The entire project, including construction and new equipment, will amount to more than $300,000.

Cleveland Twist Drill Story

The story of the founding, development and growth of Cleveland Twist Drill Co., Cleveland, is told in a 180-page illustrated cloth-bound book commemorating the firm's 75th anniversary. Entitled "Building an American Industry," the book is essentially an autobiography of Jacob D. Cox Sr., in which he describes his business life from his start as an apprentice machinist to founding and developing the Cleveland Twist Drill Co.

Another First for...
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ALLOY STEELS

The use of N-A-X ALLOY STEEL in Aircraft Gas Turbines saves up to 50 per cent of critical Stainless Steel.

Conservation is possible — without sacrifice with use of N-A-X ALLOY STEELS

With the demand for greatly increased quantities of the critical and strategic Stainless Steels used in Jet Engines intensified by the acceleration of the building program, the Air Force requested the producers of these engines to seek *suitable* material with less critical alloy content to replace the Stainless Steel for certain moderate temperature application in these aircraft gas turbines.

The steel selected had to be of low-alloy content with high strength and good welding characteristics. Ordinary low carbon steel did not meet the requirements because of its low tensile properties and the fact that it could not be satisfactorily welded by the inert arc process, which is widely used in aircraft gas turbine manufacture.

The data available from tests made on several weldable low-alloy, high-strength steels indicated that N-A-X ALLOY STEEL was the most satisfactory of the group — *its selection followed.* Unlike other possible substitutes, N-A-X ALLOY STEEL has good low temperature impact values, maintains its higher strength and is not subject to temper brittleness in the wide operating temperature range required of the steel for this purpose — from a low of −70°F. to +800°F.

The use of N-A-X ALLOY STEEL for this application has cut the amount of Stainless Steel required in half. This is of considerable importance to the Air Force.

GREAT LAKES STEEL CORPORATION

N-A-X Alloy Division **Ecorse, Detroit 29, Michigan**

NATIONAL STEEL CORPORATION

By H. C. TUTTLE *Detroit Editor*

Mirrors of Motordom

Plant tours pay off in automotive plants. Builders welcome Detroit's 250th birthday celebration as an impetus to auto sales

DETROIT

EIGHT HUNDRED thousand tourists can't be wrong. This many who saw it last year attest that the automotive industry is one of the greatest unnatural wonders of the world. And this summer the red carpet treatment has been promised for more visitors than ever. Celebrating its 250th birthday this year, Detroit will be Mecca.

Guaranteed to be at least as spectacular as the grand canyon in a less majestic way are several of the operations in automobile manufacture and assembly. The one which always elicits the most "ohs" and "ahs" is the body drop, where the finished body is lowered onto the completed chassis. Even the most callous observer never fails to marvel that the two always match in color, size and other specifications. It is here that the industry's incredibly complex scheduling has its payoff.

Good Business—Virtually all companies have come to realize that plant visitors are walking testimonials to the product they have seen come into being. And to paraphrase Confucius—"One tour is worth ten thousand pictures." For that reason, guiding people through the plants has become a vital phase of overall operations.

Most plants run a two-tour-a-day schedule, one in the morning, another after lunch. Since a jaunt through a plant may involve miles of travel, a concession is made to the footsore and weary by use of trains, towed by battery-powered tractors. The guide, using a built-in loudspeaker system in most cases, points out the high spots.

Double Duty—To the great satisfaction of sales departments, the tourist quite frequently combines his "see 'em being built" escapade with taking delivery of a new car. To visitors who make this thrilling moment the climax of their vacation, one company has prepared a special surprise.

Possibly taking the cue from imaginative dealers who at Christmas gift-wrap new cars in cellophane, Packard gives a "tiffany jewel" treatment to cars destined for customer driveaway. Lubricated and polished after they come off the assembly line, these cars are then shrouded in transparent vinyl plastic, enclosing even the tires. Karl Greiner, Packard vice president and general sales manager, believes this added touch, combined with the transportation costs saved by buying the car not from the local dealer but taking delivery at the factory, offers a distinct inducement. Packard yearly averages 3000 cars driven away from the factory by their new owners, but it undoubtedly has no plans to replace "ask the man who owns one" slogan with "wrap it up, I'll take it."

Auto, Truck Output

U. S. and Canada

	1951	1950
January	645,688	609,878
February	658,918	505,593
March	802,737	610,680
April	680,257	585,705
May	681,643*	732,161
June		897,853
July		746,801
August		842,335
September		760,847
October		796,010
November		833,874
December		671,622

Week Ended	1951	1950
June 2	121,476	146,825
June 9	152,656	200,515
June 16	156,758	204,704
June 23	158,000*	205,334

Sources: Automobile Manufacturers Association, Ward's Automotive Reports. *Preliminary.

GM Rocks the Paint Industry

A phenomenon which eventually may dictate revision of chemistry textbooks and revolutionize the paint industry has been observed by the research laboratories of General Motors Corp. Described by Ralph J. Wirshing, head of the laboratories' general chemistry department, at the meeting last week of the American Society for Testing Materials, the theory is advanced that automotive finishes (and possibly other protective and decorative coatings) can be improved by the deliberate addition of an oxidizing agent.

Big Influence — An organization which uses 15 million gallons of paint a year is bound to create quite a stir when it suggests that maybe the old ideas about the cause of finish deterioration are wrong. Oxidation, it has been thought, is the cause for "chalking" and loss of luster. Now, GM is not so sure. It thinks that maybe a reducing action, caused by some oxidizing agents reversing their usual behavior, may be the answer. And it took a small explosion plus several years of testing to bring forth this theory.

The explosion occurred in Miami, Fla., where GM weather-tests lacquers and enamels. There, trying to determine how much effect moisture has on finishes, the researchers set up small sealed aluminum cups with transparent tops, containing sample paint panels and controlled amounts of water. Two of these, after exposure to sunlight, literally "blew their tops," the result, GM believed, of formation of peroxide from the action of light on zinc oxide in the presence of moisture.

Reaction—GM's logic then was to subject paint samples to hydrogen peroxide with the intention of speeding up dulling or chalking. The oxidizing agent failed to have that effect. In fact, by using potassium dichromate as the oxidizing agent in the paint, the opposite effect was noticed. Loss of luster was slowed appreciably. It worked well in lacquer, it worked even better in enamel.

As their tests went along, Mr. Wirshing's men found that when they could make oxidizing agents work as reducing agents, making oxygen withdraw from the material rather than combine with it, the lacquer and enamel surfaces would chalk and dull in a matter of minutes when exposed to moisture. With this knowledge, the GM people believe paint chemists have a new tool to use in formulating new gloss-maintaining finishes. They readily admit that they haven't all the answers. They don't know, for one thing, what changes if any the additives have on brittleness. Very frankly Mr. Wirshing states: "While our theory as to why [paint failures occur] may not be correct, the differences we have produced are very apparent."

A Lot of Work—In the course of investigation into the effect of moisture on finishes, eleven years' work has been expended by a sizable number of men. Many attempts have been made to develop artificial sunlight

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and weather machines to provide an accelerated testing method for results which could be translated into accurate service expectations. The work has led the corporation to make use of the Smithsonian Institution's weather station atop a 10,000-foot mountain in Chile.

Ford Organization Complicated

How small is "small"? How big is "big"? When applied to Ford Motor Co., "big" means giant.

Employing 141,970 as of early this year, its organization is complicated almost beyond belief. Within the Ford Division are 15 assembly plants, 18 parts depots and 33 sales districts. The division's roster includes 38,702 people. Lincoln-Mercury Division with four assembly plants (and a new one under construction at Wayne, Mich.), a central parts depot and 24 sales districts employs 10,850.

A total of 22,372 people are employed in what the company terms its Basic Products Group, including the steel division, manufacturing services division, and Dearborn general manufacturing division. In the Engine & Pressed Steel Group—comprising the engine and foundry division, metal stamping division, and parts and equipment manufacturing division—are another 43,947 people.

Encompassed in the Aircraft Engine, Tractor & Machined Products Group, which is made up of seven divisions—Aircraft engine, Highland Park, Canton forge, automatic transmission, Mound Road, tractor and industrial engine, and tank—are yet another 17,172 (this group will swell by about 26,000 when its two most important components—aircraft engine and tank divisions—are in full production).

Additionally there are 4,184 people in the central office at Dearborn, 4,150 in the Dearborn engineering laboratories, and 593 in the Ford international organization's offices at Harborside, N. J., and New York.

Auto Output Picture Cloudy

From here on out the production picture for automobiles is going to be virtually impossible to paint with any clarity of detail. Third quarter nears with the expectation by a good many automakers that the supply of steel, copper and aluminum will be completely fouled up under CMP. The new restrictive order M-68 holds in it no promise that the 1.2 million car target is approachable.

Across the border in Windsor, Ford of Canada is closing up shop beginning today until July 3, its president making no commitment as to how much of a reduction in schedules and employment will be made when it reopens. Reason for the action is that Canada's ultratight curb on credit and increase in taxes has reduced effective demand drastically. President Rhys M. Sale, in explaining the 11,000-man layoff, said retail sales have not kept up with factory shipments. "We have no alternative. . . ."

General Motors, of course, has scheduled a shutdown of its Michigan passenger car manufacturing plants from July 28 through Aug. 6 and is planning closings of similar duration for some parts and accessories facilities and outstate car assembly plants.

Hudson, UAW Still Wrangle

Hudson Motor Car Co. here has been unable to reach anything like normal production since it resumed operations two weeks ago, after being closed for 19 days. Charge of speed-up and counter-charge of laying down on the job have been hurled by the UAW-CIO Hudson local and the company.

Incomplete cars started coming off the line as soon as the plant resumed operations June 11. Shutting down almost as soon as it opened in the morning, the plant has been in a turmoil. As the same pattern unfolded last week, Hudson workers pulled their belts in a notch and made up their minds to go through another week of only ten hours' work to prove their point. A strike vote was expected to be taken today.

TRIPLE CHECK: Concentricity of head metal parts assembly for a 3.5-inch rocket is checked at three points on a runout gage in the Oldsmobile rocket plant at Lansing, Mich. Three recording dials of the gage can be seen as the operator makes his check

Defense Business Gains

Bright spot seems to be the progress being made on defense contracts, but the ability of companies in this area to absorb the quantity of autoworkers who are expected to be released over the next several months definitely appears to be negligible. One of the fastest switches to dissimilar war work is being achieved by Oldsmobile. Now turning out 3.5-inch "bazooka" rockets in the Lansing plant which formerly made six-cylinder engines, the GM division shipped the first projectile less than five months after it received Ordnance's letter of intent.

Peak production against the present program will be reached before the end of summer. Four hundred people and 100,000 sq ft of floor space are devoted to the operation. Another 600 employees will be needed. Oldsmobile's job is to produce the antitank head, practice head, trap and spacer assembly and the motor metal parts assembly. A government loading plant adds the propellant and explosive and assembles the fuse and rocket parts.

Plymouth Fabricates Hulls

Chrysler's Plymouth assembly plant at Evansville, Ind., is rapidly assuming some of the aspects of Kaiser-Frazer's Willow Run. The 60-ft long hulls for Grumman Albatross amphibious planes are to be fabricated alongside Plymouths. Of the half-million square feet of space in the plant about 200,000 have been cleared for the aircraft job. Complete hulls eventually will emanate from the plant, but initially subassemblies, of which there are nine, will be sent to Grumman for the final assembly. About 1100 will be employed on the Evansville assignment, Chairman K. T. Keller reports.

Delco To Build $5 Million Plant

Construction of a $5 million defense plant in Rochester, N. Y., is being planned by Delco Appliance Division of General Motors.

Work will be started as soon as possible on the new facility, to be used principally in the manufacture of small motors for the Air Force, says Paul H. Rutherford, division general manager.

The Business Trend

Activity index rides on high as accelerated defense spending and facilities building by private industry point the way to a busy second half

SPURRED on by rising arms spending and record industrial expansion, business activity in the second half should set a galloping pace. Present outlay for arms is at an annual rate of over $30 billion; by the end of the year it will be half again that amount. At its peak next year, industry's biggest customer should approach an annual procurement rate in the neighborhood of $60 billion—barring all-out war or continuation of Korean hostilities. The current military budget makes no allowance for either. So, war or peace, the military build-up will continue, though its urgency will depend upon current international weather and the health of the civilian economy.

The other major stimulus to business activity is the record outlay for new plants and equipment by private industry. Nearly $25 billion in new facilities planned for this year will add another big log to the production fire. Even if civilian activities remain static or decline over the rest of the year, arms production and plant expansion should take up the slack.

Current production is still bobbing along at high tide in spite of materials and production limitations in some lines. STEEL's industrial activity index for the week ended June 16 rose to 219 per cent of the 1936-1939 average, from a final mark of 216 in the preceding week. A year ago it was at 218, a new record for that date. If automobiles were currently being assembled at last year's pace, that component would raise the index to about 230. The highest mark on record is 225.

Flow of Steel . . .

Helping to sustain the index at its crest is the uninterrupted flow of steel from the nation's mills. For the third week in a row the steel industry was scheduled to turn out 2,063,000 tons of steel for ingots and castings. This output, calculated by the American Iron & Steel Institute, compares with 1,929,100 tons produced in the comparable week of 1950. Over-capacity operations, once considered a minor miracle, are now a common occurrence: Last week marked the 13th consecutive week of operations above 100 per cent.

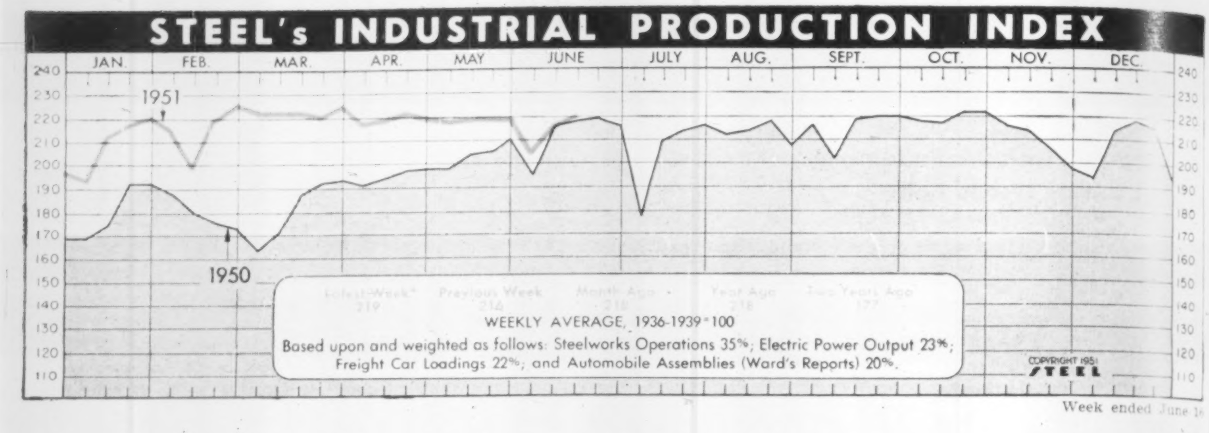
Auto Assemblies Up . . .

One dark cloud on a generally bright horizon is the automobile industry, a semi-casualty of the transition to a quasi-war economy. Severe employment layoffs face the automotive industry in July as car manufacturers and large parts suppliers cut back production schedules, says *Ward's Automotive Reports*. While the anticipated increase in production materialized last week, volume was nevertheless below totals posted earlier in the second quarter. Assemblies in the week ended June 16 by U. S. and Canadian producers totaled 156,758 passenger cars and trucks, compared to 152,656 in the prior week. A year ago 204,704 units were turned out. Sales in June are approximately equaling car production, according to a survey of manufacturers' field reports. Apparently, on a national basis, there is little or no build-up in dealer stocks for those handling

BAROMETERS of BUSINESS

		LATEST PERIOD*	PRIOR WEEK	MONTH AGO	YEAR AGO
INDUSTRY	Steel Ingot Output (per cent of capacity)†	103.0	103.0	104.0	101.0
	Electric Power Distributed (million kilowatt hours)	6,747	6,734	6,559	6,012
	Bituminous Coal Production (daily av.—1000 tons)	1,654	1,437	1,603	1,740
	Petroleum Production (daily av.—1000 bbl)	6,189	4,168	6,177	5,347
	Construction Volume (ENR—Unit $1,000,000)	$206.9	$296.0	$151.8	$277.4
	Automobile and Truck Output (Ward's—number units)	156,758	152,656	156,217	204,701
	*Dates on request. †Weekly capacities, net tons: 1951, 1,999,035; 1st half 1950, 1,906,268; 2nd half 1950, 1,928,721.				
TRADE	Freight Car Loadings (unit—1000 cars)	815†	813	809	806
	Business Failures (Dun & Bradstreet, number)	130	172	171	178
	Currency in Circulation (in millions of dollars)‡	$27,499	$27,520	$27,287	$26,993
	Department Store Sales (changes from like wk. a yr. ago)‡	+3%	+5%	+3%	+5%
	†Preliminary. ‡Federal Reserve Board.				
FINANCE	Bank Clearings (Dun & Bradstreet—millions)	$15,066	$17,050	$15,490	$13,553
	Federal Gross Debt (billions)	$254.6	$254.6	$254.7	$256.3
	Bond Volume, NYSE (millions)	$13.3	$13.1	$15.0	$23.8
	Stocks Sales, NYSE (thousands of shares)	6,165	5,829	8,577	7,929
	Loans and Investments (billions)†	$69.0	$69.4	$69.4	$67.0
	United States Gov't. Obligations Held (millions)†	$30,207	$30,443	$30,339	$36,183
	†Member banks, Federal Reserve System.				
PRICES	STEEL's Weighted Finished Steel Price Index††	171.92	171.92	171.92	156.58
	STEEL's Nonferrous Metal Price Index‡	232.7	239.1	241.6	185.5
	All Commodities†	181.7	181.9	182.2	157.0
	Metals and Metal Products†	189.0	189.3	189.5	172.0
	†Bureau of Labor Statistics Index, 1926=100. ‡1936-1939=100. ††1935-1939=100.				

STEEL's INDUSTRIAL PRODUCTION INDEX



WEEKLY AVERAGE, 1936-1939=100

Based upon and weighted as follows: Steelworks Operations 35%; Electric Power Output 23%; Freight Car Loadings 22%; and Automobile Assemblies (Ward's Reports) 20%.

Week ended June 16

the leading makes. But a definite softening in demand would be indicated by the fact that there are just sufficient buyers to take all the cars turned out at today's reduced production rate.

Coal Output Creeps Up . . .

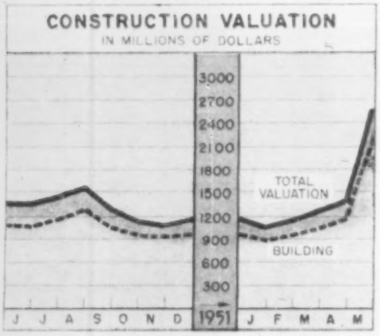
Reduced schedules are still the order of the day in the coal mines. Total production of bituminous coal and lignite in the week ended June 9 was estimated at about 9,925,000 net tons by the National Coal Association. This output was a 13.9 per cent increase over the preceding holiday week when 8,620,000 tons were mined.

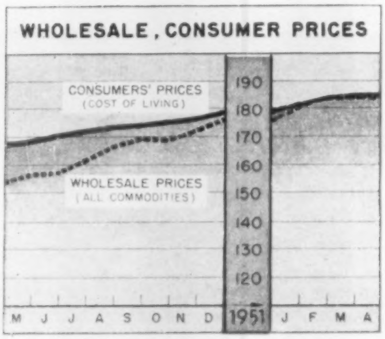
Good Year for Builders . . .

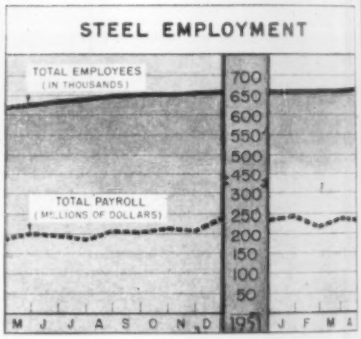
The building industry should have another good year, notwithstanding credit and use restrictions. The whopping $2,572,961,000 in construction contract awards in May is by far the highest total of any month in history, says F. W. Dodge Corp. Three atomic projects accounted for nearly $1 billion of this total. Previous high was last August, when awards totaled $1,548,876,000. May's figure alone exceeded yearly totals for the depression years 1932-1935. On a weekly level, engineering construction contracts awarded were only $206,897,000 in the week ended June 14. This was the fourth lowest volume of any week this year. Industrial building, 66 per cent below the average week so far, is low at $31.8 million.

Prices Sag Slowly . . .

The continuing war against inflation—inflation is considered the most serious challenge to economic tranquility—is progressing smoothly. Another weekly round was won in the price arena, as average primary market prices dropped 0.1 per cent over the week ended June 12 to 181.7 per cent of the 1926 average. At this point the index is just less than 1 per cent above the level prevailing







Construction Valuation

(37 States)—In Millions of Dollars

	Total		Building	
	1951	1950	1951	1950
Jan.	1,043.2	730.9	881.9	578.8
Feb.	1,140.5	779.5	962.3	627.0
Mar.	1,267.4	1,300.2	1,043.8	1,075.3
Apr.	1,375.0	1,350.5	1,108.9	1,123.5
May	2,573.0	1,347.6	2,295.0	1,083.0
June	.....	1,345.5	.....	1,072.0
July	.....	1,420.0	.....	1,162.2
Aug.	.....	1,548.9	.....	1,295.1
Sept.	.....	1,286.5	.....	1,048.3
Oct.	.....	1,135.8	.....	956.7
Nov.	.....	1,087.1	.....	931.6
Dec.	.....	1,169.4	.....	969.0
Total	.....	14,501.1	.....	11,922.5

F. W. Dodge Corp.

Price Indexes

	Wholesale (1926=100)		Consumers (1935-39=100)	
	1951	1950	1951	1950
Jan. ..	180.1	151.5	181.5	168.2
Feb. ..	183.6	152.7	183.8	167.9
Mar. ..	184.0	152.7	184.5	168.4
Apr. ..	183.5	152.9	184.6	168.5
May ..	....	155.9	....	169.8
June ..	....	157.3	....	170.2
July ..	....	162.9	....	172.0
Aug. ..	....	166.4	....	173.4
Sept. ..	....	169.5	....	174.6
Oct. ..	....	169.1	....	175.6
Nov. ..	....	171.7	....	176.4
Dec. ..	....	175.3	....	178.8

U. S. Bureau of Labor Statistics.

Steel Employment, Payrolls

	Employees† in Thousands		Payrolls in Millions	
	1951	1950	1951	1950
Jan.	657	609	$245.3	$189.3
Feb.	663	613	219.4	174.7
Mar.	663	616	238.3	190.0
Apr.	666	621	234.8	186.2
May	...	628	...	199.9
June	...	636	...	195.3
July	...	643	...	188.7
Aug.	...	649	...	206.6
Sept.	...	650	...	203.8
Oct.	...	650	...	212.2
Nov.	...	653	...	208.0
Dec.	...	657	...	235.0

† Monthly average. American Iron & Steel Institute.

Charts—Copyright 1951 STE

on June 23, but 15.7 per cent above the pre-Korea period. The monthly comprehensive wholesale price index for May dropped about 0.3 per cent over the month to approximately 183 and marked the second consecutive month of decline, after rising almost steadily since the end of 1949.

May Buying Drops Off . . .

Consumer buying and new orders placed by business in May were appreciably below the peak rate attained in the first quarter, the Office of Business Economics reported. Since personal income is still rising, the reduction in consumer expenditures has been accompanied by a sharp advance in personal saving. A substantial amount of production has gone into inventories, some for the purpose of expanding military output and some reflecting the effects of the slowdown in consumer and distributor buying.

More Steelworkers . . .

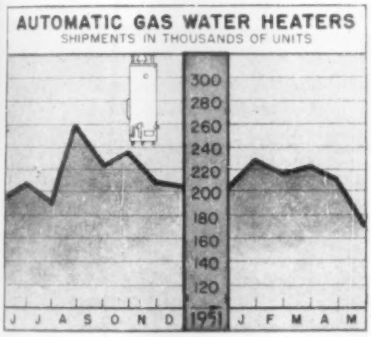
Longer hours and more pay were claimed for the steelworker in April, says the American Iron and Steel Institute. Employment was higher than ever before at 665,700, up 2600 in the month and nearly 9000 since the first of the year. Wage earners received an average of $1.926 an hour, nearly 22 cents above April, 1950.

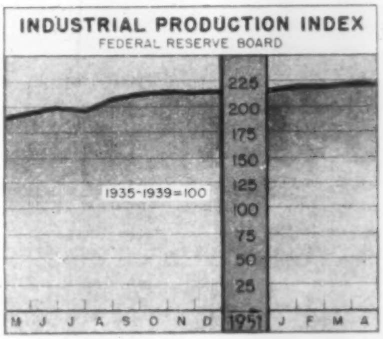
Trends Fore and Aft . . .

Emerson Radio & Phonograph Corp.'s first half net earnings are down 20 per cent . . . Avco Mfg. Corp. is closing two plants for four weeks and Nash-Kelvinator cut refrigerator production about 25 per cent by laying off 900 workers . . . Television receivers shipped to dealers in the first 17 weeks of 1951 aggregated 2,076,124. April shipments totaled 261,357 . . . A swing to liberalized vacations is evidenced by a National Industrial Conference Board survey showing about half the companies questioned grant maximums of three weeks or more for both hourly paid and salaried people . . . Factory sales of household vacuum cleaners dropped 11 per cent in May to 201,983 units, lowest total since July, 1949.

Issue Dates of Other FACTS and FIGURES Published by STEEL:

Durable Goods	May7
Employ., Metalwkg.	June18
Fab. Struc. Steel	June4
Foundry Equip.	June18
Freight Cars	June18
Furnaces, Indus.	May21
Furnaces, W. Air	May28
Gear Sales	June11
Gray Iron Castings	May28
Ironers	May14
Machine Tools	May7
Malleable Castings	May28
Purchasing Power	June4
Pumps, New Orders	June11
Radio, TV	June11
Ranges, Elec.	June11
Ranges, Gas	June4
Refrigerators	June18
Steel Castings	May28
Steel Forgings	June11
Steel Shipments	May21
Vacuum Cleaners	June4
Wages, Metalwkg.	June18
Washers	May14





Automatic Gas Water Heaters

Shipments in Units

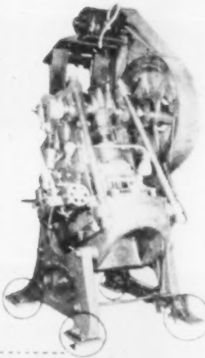
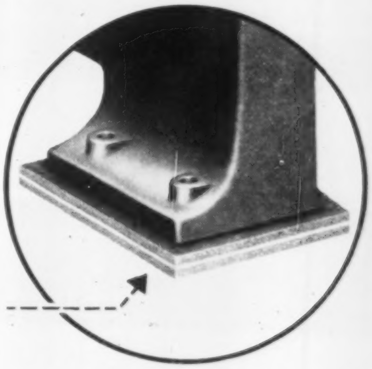
	1951	1950	1949
Jan.	225,600	131,600	88,400
Feb.	213,400	156,500	84,500
Mar.	223,300	172,800	106,000
Apr.	209,100	176,400	115,200
May	168,800	195,200	120,200
June	......	207,100	132,200
July	......	197,500	114,400
Aug.	......	259,800	138,800
Sept.	......	222,600	147,300
Oct.	......	235,100	154,200
Nov.	......	206,000	138,300
Dec.	......	202,500	126,500
Total	......	2,363,100	1,466,000

Gas Appliance Mfrs. Assoc.

Industrial Production Index

	Total Production		Iron, Steel		Non-ferrous	
	1951	1950	1951	1950	1951	1950
Jan.	221	183	255	203	224	180
Feb.	221	180	252	201	219	190
Mar.	222	187	263	205	212	200
Apr.	222	190	264	222	214	198
May	...	195	...	226	...	197
June	...	199	...	231	...	207
July	...	196	...	228	...	202
Aug.	...	209	...	236	...	212
Sept.	...	211	...	245	...	216
Oct.	...	216	...	253	...	223
Nov.	...	214	...	247	...	227
Dec.	...	217	...	253	...	227
Avg.	...	200	...	229	...	207

Federal Reserve Board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VIBRATION AND NOISE DEADENED
UNISORB absorbs from 60% to 85% of transmitted vibration and noise . . . saves on machinery, building and floor wear . . . helps promote greater production efficiency through lowered worker fatigue.

NO WASTEFUL FLOOR DAMAGE
Because it eliminates bolts and lag screws, UNISORB-Mounting does away with old-fashioned, destructive floor-drilling . . . keeps floors like new.

INSTALLATION TIME SHORTENED
UNISORB-Mounting requires no bolts, no lag screws. A special cement grips the UNISORB pads to machine feet and floor with a holding strength of 1500 lbs. per sq. ft. *minimum*.

UNISORB is supplied in pads ready-cut for immediate installation, or by the square foot. Write for details today.

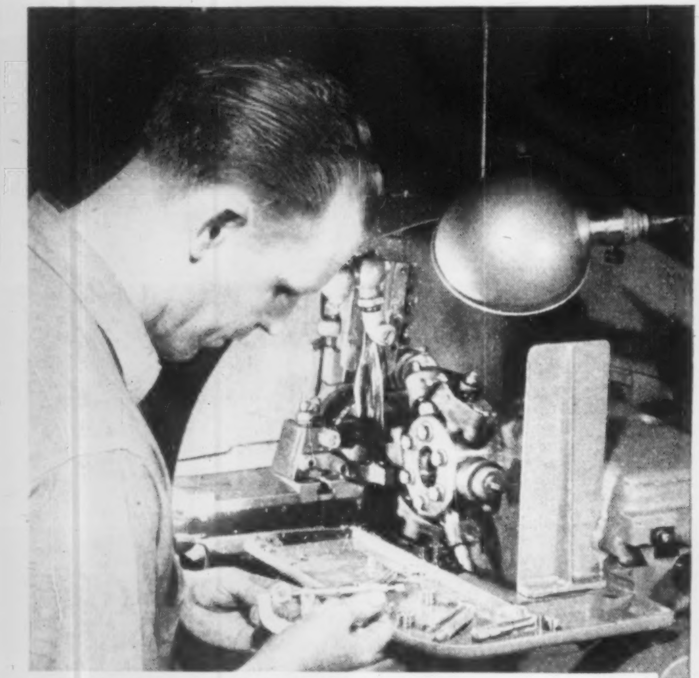
THE FELTERS COMPANY
210-Q SOUTH ST., BOSTON 11, MASS.
Offices: New York, Philadelphia, Chicago, Detroit, St. Louis
Sales Representative: San Francisco
Mills: Johnson City, New York
Millbury, Mass., Jackson, Mich., New York City

5 METALS IN PRECISION-MADE REEL MACHINED WITH ONE SUNICUT OIL

The Ocean City Manufacturing Company operates Brown & Sharpe automatics on free-turning brass, aluminum, cold-rolled steel, phosphor and hardware bronze. Having used Sunicut Cutting Oils since 1941 with complete satisfaction, the plant decided a year ago to find out what other products could do. Numerous competitive oils were tested, and the best was selected for a long trial run.

But this oil did not prove satisfactory in actual use. It caused the gibs to corrode and the slides to stick. Operators found miking difficult. Downtime and rejects grew to disturbing proportions. Finally, to protect its automatics and restore its production efficiency, the plant decided to go back to Sunicut Cutting Oils and standardized on Sunicut 11.

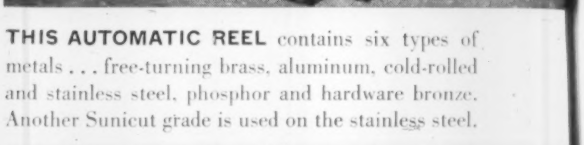
Sunicut 11 is a "Job Proved," dual-purpose cutting oil for automatic screw machines. Its transparency permits quick and accurate miking. Among its virtues is the fact it will not stain brass. It drains rapidly, minimizing carry-off. And its high lubricating and cooling properties aid in prolonging tool life and improving finishes. Moreover, it protects finished parts from rust and corrosion. For other outstanding cutting oil case histories write for booklet S-6.



MACHINE: Brown & Sharpe No. 2G • **METAL:** 11 ST aluminum
OPERATIONS: Feed stock, center drill, counterbore, recess and countersink, tap, form and cut off • **SFPM:** 800 • **SPEED:** 3,150 rpm
PRODUCTION: 250 collar housings per hr. • **CUTTING OIL:** Sunicut 11

MACHINING PARTS for Ocean City's "90" Automatic Reel. Sunicut 11 does not corrode the bronze gibs of the automatics, minimizes carry-off, makes miking easy. A coolant tried as an "economical" replacement failed on all three counts.

THIS AUTOMATIC REEL contains six types of metals . . . free-turning brass, aluminum, cold-rolled and stainless steel, phosphor and hardware bronze. Another Sunicut grade is used on the stainless steel.



THE PRECISION PARTS that Sunicut 11 helps to make possible are put to the test as this top-quality reel goes into action. Little does the fisherman know how much of his pleasure he owes to a cutting oil.

SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO ®

Men of Industry

GEORGE A. INGALLS
. . . AMF vice president

KENNETH B. HOLLIDGE
. . . manages new Arthur Colton plant

CHARLES A. MAPP
. . . locomotive sales, Fairbanks, Morse

George A. Ingalls, a director and comptroller of **American Machine & Foundry Co.,** New York, was elected a vice president, and continues as comptroller. Mr. Ingalls has been associated with AMF since 1919. He is a member of the board of directors of several AMF subsidiaries.

George W. Mork was appointed chief engineer of **Heil Co.,** Milwaukee. He will serve as an assistant to **Arnold F. Meyer,** vice president in charge of engineering, in the newly created post and aid in the development of an expanded road machinery program. Mr. Mork was chief engineer of the tractor equipment division of Bucyrus-Erie Co. for the last 13 years.

D. D. Cramer was elected president of **Aluminum Ladder Co.,** Worthington, Pa. Formerly vice president, he succeeds **S. H. Carbis,** founder and president of the company, who died in April of this year. **H. J. Mudd,** general manager, was elected vice president.

Gordon L. Chapman was elected president of **Carver Pump Co.,** Muscatine, Iowa. **Roy J. Carver,** founder of the company, was elected chairman of the board. **Alexander A. Zuber,** plant manager, was elected a vice president and a director. Mr. Chapman joined the company in 1948 as comptroller. In July of that year he was elected vice president and a director.

John Thomas was appointed vice president in charge of product engineering for **American Locomotive Co.,** Schenectady, N. Y. He has been with the company 22 years and since 1948 was manager of the locomotive division.

Arthur Colton Co., division of Snyder Tool & Engineering Co., has established a second plant in Paducah, Ky., to produce punches and dies for the pharmaceutical trade. **Kenneth B. Hollidge,** executive vice president of the Detroit pharmaceutical and packaging machinery firm, was appointed general manager of the plant. He will be assisted in management by **William Vance,** recently appointed plant superintendent.

A. W. Winston, formerly executive assistant, was named assistant manager of the magnesium department of **Dow Chemical Co.,** Midland, Mich.

Pacific Airmotive Corp., Burbank, Calif., appointed **Chester Keasling** manager of a newly established division created for general overhaul and maintenance of commercial aircraft at its Burbank plant.

I. W. Ferguson was promoted to manager, quality control, **Cooper-Bessemer Corp.,** Mt. Vernon, O. **E. C. Phelps** was elevated to assistant works manager, formerly held by Mr. Ferguson. **Harold Johnson** becomes factory superintendent and **Harry Cecsarini,** supervisor of routing and estimating department.

Lloyd F. Giegel was appointed branch manager of the Gary, Ind., sales office of **Reliance Electric & Engineering Co. Daniel J. Donnelly** was added in a sales engineering capacity to the Philadelphia office. Mr. Giegel succeeds **R. Magnetti,** who has resigned to enter the electrical construction industry. Mr. Giegel joined Reliance in 1947, and has since been attached to the company's applied engineering department.

Charles A. Mapp was appointed district manager of locomotive sales in the Chicago area for **Fairbanks, Morse & Co.** He succeeds **C. H. Morse Jr.,** recently appointed manager, service department, locomotive division. Mr. Mapp joined Fairbanks, Morse in the locomotive service department in 1947, and was later promoted to sales representative, Cleveland area.

Oliver Goshia, former Toledo, O., stock broker, has purchased all outstanding stock of **Precision Tool & Die Co.,** Bronson, Mich., and will be active in its management as vice president and treasurer.

North American Aviation Inc., Inglewood, Calif., appointed **Stanley C. Hellman** assistant general manager of the firm's Columbus division. He was formerly manager of North American's Dayton, O., office.

H. B. Megill was appointed general manager of the **Dominion Magnesium Ltd.,** Toronto, Ont. He formerly served as plant manager and is succeeded in that position by **L. G. White.**

Ralph D. Holcomb was named Pacific Coast division manager for **Harnischfeger Corp.,** Milwaukee. **John H. Taylor Jr.** was placed in charge of the firm's excavator sales in the Philadelphia area. **James C. Ray** was named Jacksonville, Fla., district manager.

Philip T. Reilly was appointed rolling mill superintendent at the **Venezuela Steel Corp.,** Caracas, Venezuela. He had association with American

Steel & Wire Co., and later with Northwestern Steel & Wire Co., Sterling, Ill.

Charles E. Cleminshaw, for the last two years manager, Cleveland valve division, **Parker Appliance Co.,** Cleveland, was named area manufacturing manager to take charge of the company's present Los Angeles plant, the adjacent fittings plant now under construction, and of the Pacific sales territories. **Harvey E. Schroeder,** manager of the Parker Pacific division since 1946, will assume direction of the new fittings plant, while **R. J. Trivison,** head of standards department in Cleveland, was named manager of the Los Angeles valve division. In Cleveland, **C. J. Giblin** will manage the Cleveland valve division, while **Scott A. Rogers** was named manager of the jet division, a unit newly formed to handle growing jet engine parts production.

CHARLES E. CLEMINSHAW
. . . Pacific Coast mgr., Parker Appliance

Albert L. Vits was named a vice president of **Aluminum Goods Co.,** Manitowoc, Wis., to succeed **Earl O. Vits,** resigned. **Robert F. Franz** was named assistant secretary.

Carl H. Horne was named sales manager of **Rheem Mfg. Co.'s** refrigerator division, Richmond, Calif. Rheem will enter the refrigerator market with a gas operated unit.

A. J. Bruens was appointed general traffic manager for **Rockwell Mfg. Co.,** Pittsburgh.

A. P. Papke was named manufacturing co-ordinator, and **F. F. Gregory,** merchandising co-ordinator for **A. O. Smith Corp.,** Milwaukee. Both will report to **J. M. Floyd,** executive vice president.

Wolinsky Iron & Metal Co., Milwaukee, appointed **Harry S. Pinkus** sales manager. He previously was sales manager of the James Flett merchandising organization in Chicago.

Edgewater Steel Co., Oakmont, Pa., named **A. J. Couse** assistant to the vice president and general sales manager. He is succeeded by **D. W. Odiorne** as district manager of the Chicago and St. Louis territories. **W. O. Fleming** was appointed metallurgical engineer to handle Mr. Odiorne's previous duties.

Hunt-Spiller Mfg. Corp., Boston, placed **Richard P. Carroll** in charge of budget and material control, and named **J. William Schaeffer** head of the standards section.

William S. Renier was appointed director of engineering for **Hydraulic Press Mfg. Co.,** Mt. Gilead, O. He was manager of the plastics division of Giddings & Lewis Machine Tool Co., Fond du Lac, Wis., and prior to that was engineer for Allen-Bradley Co., Milwaukee.

WILLIAM S. RENIER
. . . Hydraulic Press engineering dir.

George C. Rodgers and **Irving W. Clark** were named managers of the respective military sales departments of **American Air Filter Co.** operations in Moline, Ill., and Louisville. Mr. Rodgers will manage the military sales department of Herman Nelson Division, Moline, where the company manufactures portable heaters and ventilators, and other heating and air handling equipment. Mr. Clark will be in charge of the military and special contracts department at Louisville.

At the Boston Works of **Allis-Chalmers Mfg. Co.,** Milwaukee, **Leonard J. Linde** was appointed assistant general manager and chief engineer; **Henry P. Pinkham** as assistant chief engineer; **John F. Chipman** as product engineer; **George W. O'Keefe** as manager of sales; **Alfred E. Kilgour,** assistant manager of sales; **Russell J. Neagle,** special representative and **Chester D. Ainsworth,** standards engineer.

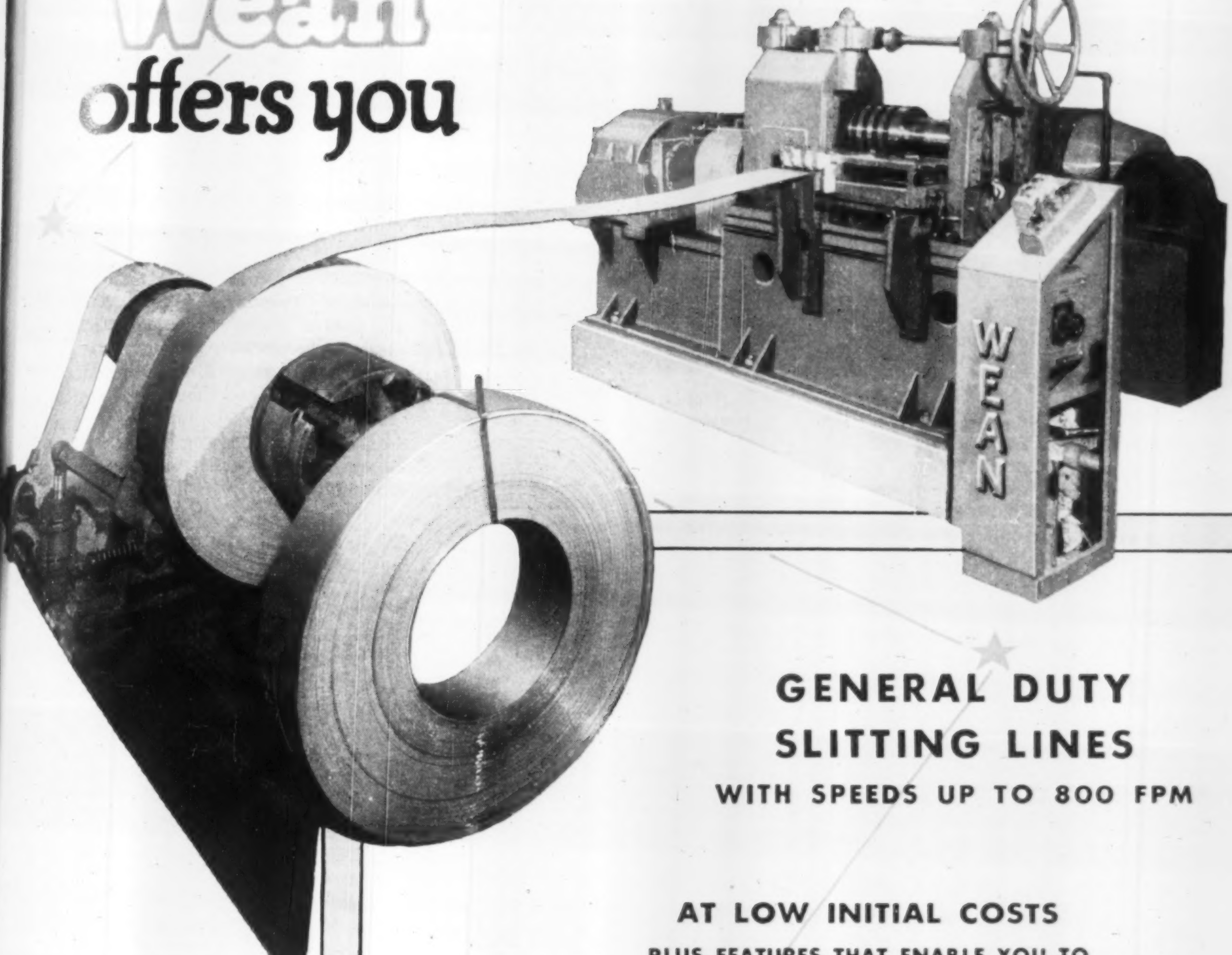
American Management Association, New York, elected **James D. Wise,** president, Bigelow-Sanford Carpet Co., New York, to the newly created post of vice president for general management division — newest of AMA's eight divisions. Also announced was election of four other vice presidents for 1951-52: Vice president-production, **Hoyt P. Steele,** vice president of Benjamin Electric Mfg. Co., Des Plaines, Ill.; vice president-marketing division, **A. L. Nickerson,** director in charge of domestic marketing, Socony-Vacuum Oil Co., New York; vice president-finance and accounts division, **Joseph M. Friedlander,** financial vice president, Jewel Tea Co. Inc., Barrington, Ill.; vice president-insurance division, **Paul H. Schindler,** manager, insurance department, Youngstown Sheet & Tube Co., Youngstown.

David McEwen was appointed sales manager of **Rochester Mfg. Co.,** Rochester, N. Y. He has been serving as assistant sales manager and joined the company in 1936.

Following consolidation of sales divisions, **Inland Steel Products Co.,** Milwaukee, announces: **E. J. Cullen,** former manager, sheets and roofing products sales, was named to head the new sheet metal products sales division. **G. H. Schneider** was named assistant sales manager. **D. L. Rossiter,** former manager of the company's Cleveland plant, was appointed manager of the new metal lath products sales division, and **A. T.**

E. J. CULLEN
. . . heads div., Inland Steel Products

Wean offers you



GENERAL DUTY SLITTING LINES

WITH SPEEDS UP TO 800 FPM

AT LOW INITIAL COSTS

PLUS FEATURES THAT ENABLE YOU TO

1. **Reduce Inventories**
2. **Cut Labor Costs**
3. **Eliminate Extras**
4. **Minimize Maintenance Costs**

If you are in the business of handling strip steel or fabricating steel parts or products from strip steel you should give your slitting operation high consideration. Well designed slitting lines enable you to reduce inventories, lower labor costs and eliminate extras. Wean engineered slitting lines give you these important factors at lowest initial costs.

If you have a slitting problem — or merely desire a check on the efficiency of your present operation — call in Wean specialists.

Wean

Equipment Corporation

CLEVELAND, OHIO

Krueger and **W. G. Baum** were named assistant managers. **B. B. Barker**, former manager of the Chicago branch warehouse, was appointed manager, consumer products sales division in Milwaukee. **M. P. Komar**, formerly of the Milwaukee firm's parent company, Inland Steel Co., was named manager of the Chicago branch. The new manager of the Cleveland plant, **G. F. Gruenert**, was formerly manager of the Rochester, N. Y., branch. **Arthur F. Pope** was named to replace Mr. Gruenert as manager of the newly combined Rochester-Buffalo branch operations at Buffalo.

Charles H. Mercier becomes supervisor of foreign traffic, abrasive division, and **Frederick D. Wilson**, supervisor, domestic traffic for **Norton Co.**, Worcester, Mass. **Charles A. Bonn** was appointed abrasive grain engineer for the company, and will cover Ohio and Michigan with headquarters in the Cleveland district office.

Electric Products Co. announces that **N. G. Denbroeder** has joined the **Arthur B. Sonneborn Co.** in its Toledo, O., office where he will be associated with **Shep Kinsman.** As application engineer for the Sonneborn company Mr. Denbroeder will handle the sale and application of the E. P. line of battery chargers, electrolytic motor-generators and large motors and generators.

Floyd C. Diaz was appointed department superintendent of blast furnaces in the Duluth Works of **American Steel & Wire Co.**, Cleveland subsidiary of U. S. Steel Corp. He was general foreman of blast furnaces at the company's Donora Works, Donora, Pa.

Filling a new position, **Wesley R. Johnson** was named market analyst for **Shakeproof Inc.**, a division of Illinois Tool Works, Chicago.

JEREMIAH J. BOUGHEY
western labor relations, U. S. Steel

Jeremiah J. Boughey was appointed director of labor relations in the western area for **United States Steel Co.**, Chicago. He succeeds **George H. Dowding**, who was promoted to the position of director of the company's labor contract administration in Pittsburgh. Since 1947 Mr. Boughey has been assistant director of industrial relations in the Chicago district.

Daniel S. Wilkin was appointed director of personnel of **Reserve Mining Co.**, headquarters of which are located for the present in Cleveland. Reserve Mining Co. is owned by Armco Steel Corp., Republic Steel Corp. and National Steel Corp. It is developing a process to extract iron minerals from taconite rock. The company is building a plant for this purpose and a complete town to house employees near Babbitt, Minn. Succeeding Mr. Wilkin as employment adviser at Armco is **Rowan F. Crawford.** Mr. Wilkin takes up his new duties July 9.

Appointments in the engineering department, **New Departure Division**, General Motors Corp., Bristol, Conn., include **Raymond J. Lynch**, assistant chief engineer, and **Wallace F. Dunn**, manager of bearing applications. Mr. Dunn succeeds **Frederick J. Gabarino**, recently appointed chief engineer of the division. The duties of **Leland D. Cobb** as manager of research and development have been broadened to include production design.

Ben C. Hawk was named chief industrial engineer, San Diego, Calif., plant, **Consolidated Vultee Aircraft Corp.**

William L. Harris has joined **International Packings Corp.**, Bristol, N. H., as assistant superintendent. He was production manager and development manager of Allis Rubber Corp., division of Chicago Belting Co.

Luria Steel & Trading Co. appointed **George H. Bangs** district manager at Birmingham.

H. B. Kiphuth was appointed assistant director of management development, **Westinghouse Electric Corp.**, Pittsburgh.

In the chemical department, Pittsfield, Mass., **General Electric Co.**, **O. O. Barton** was appointed priorities supervisor, and **Robert D. Buzzee** was appointed buyer for the plastics division.

Chain Belt Co., Milwaukee, announces appointment of five new district sales engineers: **Edward D. Williams** was assigned to the Philadelphia district sales office; **Truman J. Hammel** will work out of the Kansas City office; **R. W. DeMott Jr.** was assigned to the New York district sales office; **Kenneth Burch** will work out of the Cleveland district sales office; and **George Robichaud**, the Boston district sales office.

John A. Luttrell was appointed Pittsburgh district office manager, **Latrobe Electric Steel Co.**, Latrobe, Pa. He succeeds **George W. Frick**, appointed assistant sales manager, with headquarters at the plant in Latrobe.

OBITUARIES . . .

J. Gordon Gage, 64, manager of the Butler, Pa., division of **Armco Steel Corp.**, died June 16 of a heart attack while playing golf at Cambridge Springs, Pa.

Joseph H. Geier, 56, a founder and partner in **Industrial Sheet Metal Works Co.**, Milwaukee, died June 14.

Julius Judell, 69, president of **Milwaukee Flush Valve Co.**, Milwaukee, since 1912 when he founded the firm, died June 15.

Walter M. Charman, 57, president and founder of **Ferro Engineering Co.**, Cleveland, died June 15.

J. Charles Barraclough, retired superintendent of **Crucible Steel Co.'s** sheet mill at Syracuse, N. Y., died June 10.

Frank S. Schuyler, 66, retired manager, Detroit district office, **Allis-Chalmers Mfg. Co.**, died June 10. He completed 30 years as manager at Detroit before retiring December, 1950, after 43 years of continuous service with Allis-Chalmers.

Harold A. Gilson, 37, vice president and general manager, **Buffalo Structural Steel Corp.**, Buffalo, died June 8.

Howard K. Dagnan, assistant industrial engineer at the Fairfield tin mill of **Tennessee Coal, Iron & Railroad Co.**, Birmingham, died June 15 following a heart attack.

Production AND Engineering NEWS AT A GLANCE

JET WITHIN A JET—Latest type of turbojet engine, developed in Britain and to be built eventually in this country, is called a "twin spool" type by virtue of the fact it has two compressor and turbine systems on the same shaft. Between the main compressor and turbine, supported by suitable bearings, is an intermediate six-stage compressor and eight-stage turbine. Operating speed is relatively low, around 8000 rpm, and the idea is to improve fuel economy, for which jets are notoriously poor.

WHY PAINTS DULL—On the basis of ten-year field tests, General Motors research technicians have come up with the conclusion that the "chalking" of automotive paint finishes is not the result of oxidation but rather a reducing action in which hydrogen peroxide is formed from the effects of light and moisture and reacts on the lacquer film. Their findings are tentative but nonetheless revolutionary, and may have profound effect on the studies of all types of paint failures.

NO JIGSAW PUZZLES—If you have a materials handling problem and want to puzzle it out in miniature form, you can buy a kit which includes a sturdy plastic-surface planning board ruled in ¼-inch squares; over 900 accurately scaled templates representing equipment and personnel; colored strips for indicating boundaries of buildings, storage areas, roadways; a specially graduated ruler, plastic marking pencil and rubber cement—plus two instruction books telling how to prepare flow diagrams and analyze handling methods.

BLANKET FOR HOT METAL—Putting molten metal "to bed" during periods of nonproduction like week-ends and holidays is a new job for the mineral vermiculite. A West Coast fabricator uses a 4-inch topping on 60-ton galvanizing kettles, shuts off 20 of 32 gas burners and when operations resume the metal is still up to temperature because of the high insulating properties of the lightweight mineral. The topping can be scraped off and reused.

NEW SOLUBLE CUTTING OIL—Emulsifier STH is the identification of a new coolant-lubricant for cutting, grinding, drawing and stamping now on the market. It is not an ordinary soluble cutting oil, but rather is based on a unique family of chemical compounds which possess good lubricating properties because of their high affinity for metals. Recommended uses are all types of metalworking machines which employ coolant recirculating systems that are properly sealed for handling water emulsions, such as automatic chucking machines, hand screw machines, turret lathes, cylindrical and surface grinders, mechanical saws, drill presses and milling machines. The liquid is used in concentrations of 1 to 3 per cent, far less than conventional soluble cutting oil emulsions.

ROLLING MAGNETIC ALLOYS—Magnetic amplifiers are replacing vacuum tubes in many types of military electronic equipment. They require cores of thin-gage iron-nickel-cobalt alloys which are rolled on special mills embodying a high degree of precision. One is operated by the Naval Ordnance Laboratory at White Oak, Md. —p. 114

FRIGATES TO GUIDED MISSILES—Drawing No. 1,000,000 for the Navy's Bureau of Ordnance files a blueprint of a guided missile for shipboard launching against aircraft, recently released for production at a proposed plant in Pomona, Calif., to be operated by Consolidated Vultee, contractor originating the drawing. No. 1, issued March 14, 1885, was a carriage for a 5-inch gun later installed in the *USS Chicago*, a "protected steel frigate, classed first rate."

ORE FROM ORINOCO—First shipment of hematite ore from Venezuela has arrived at Bethlehem's Sparrows Point mill after 14 years of developmental work on the South American property. Expectations are that the Bolivar deposits will yield some 3 million tons a year. —p. 126

R-R-N-B ALLOY—Rhenium is a little known metal despite the fact it was discovered 25 years ago. British metallurgists see possibilities for its commercial application, proposing an alloy for pen nibs containing 75 per cent rhenium, 15 per cent rubidium, 7.5 per cent niobium and 2.5 per cent beryllium.

PATH MARKED FOR GUNNERS—A new 90-mm high-explosive shell with a tracer element built into the base to mark the trajectory from the instant the projectile leaves the gun will go into production for the Army at the Trenton, N. J., plant of L. A. Young under a contract involving nearly $7.4 million. Heavy forging machines and presses will be added to present facilities. —A.H.A.

Metalworking Outlook—p. 39 Market Outlook—p. 143

Applying wire rope lubricant to individual wires on a stranding machine

Proper Lubrication

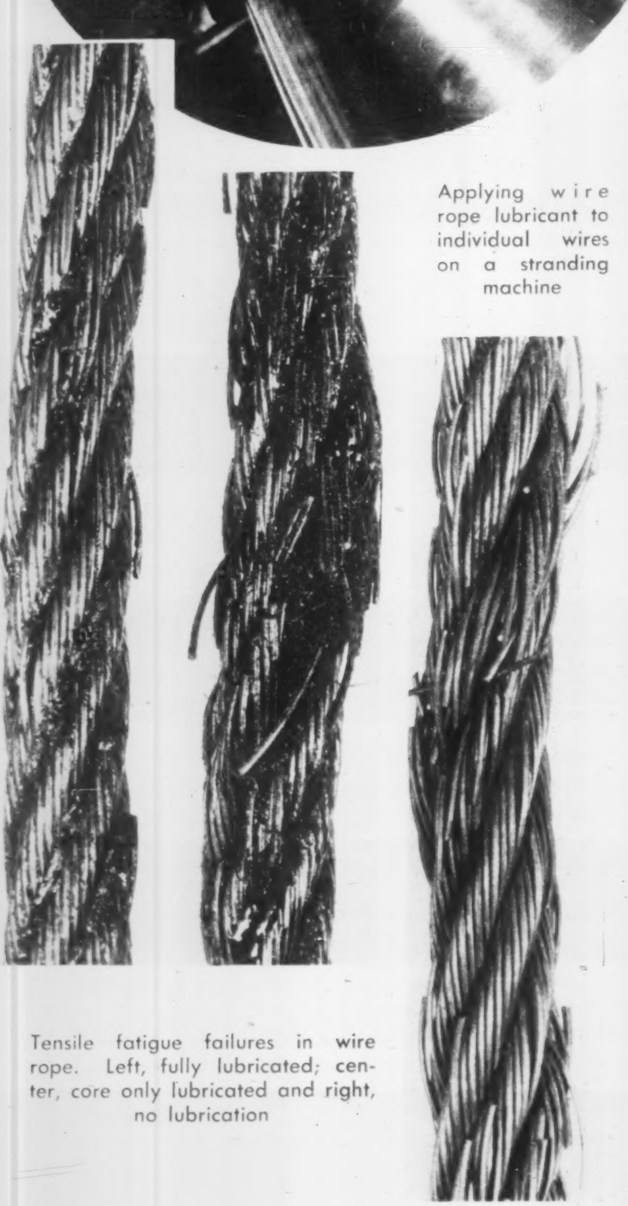
Wire rope is a precision machine which must be treated as such and not as an ordinary, relatively unimportant and obscure piece of operating equipment. Like any machine, abuse, misuse, improper handling and maintenance procedures will shorten its life expectancy and increase operating costs

AT a glance, wire rope appears to be a simple piece of equipment composed of numerous small steel wires twisted around a core and used as a compromise between solid steel wire and ordinary hemp rope for the obvious purpose of securing the strength of steel and the flexibility of hemp.

Simplicity of wire rope stops, however, with its appearance. Actually a wire rope is a complex machine composed of many moving parts requiring precise engineering in its design and skill and care in its manufacture. For instance, a 6 x 41 filler wire, IWRC rope is made up of 295 wires or machine elements of various sizes, each designed and manufactured with precision and exactness.

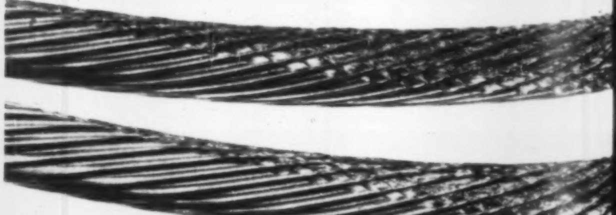
Individual wires in a wire rope under either dynamic or static loading are subjected to a combination of stresses including tension, compression, torsion, shear, and fatigue which are extremely complex and practically incapable of analysis. Each wire bears on adjacent wires and theoretically these bearings are line or point contact. Actually, the bearing points or lines of the wires are deformed until there is a finite bearing area created which is sufficient to support the applied load. Bearing pressures between wires, however, are obviously extremely high as is the friction between wires.

Lubricant Functions—Having analyzed wire rope—the machine—from the standpoint of design, construction, materials used, loads imposed and conditions of operation, it is found that the ideal lubricant should reduce friction between wires and strands, thereby permitting their free movement, and prevent



Tensile fatigue failures in wire rope. Left, fully lubricated; center, core only lubricated and right, no lubrication

Internal corrosion on a wire strand



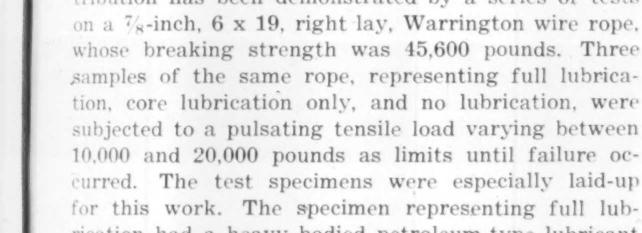
Lengthens Wire Rope Life

By JOHN P. CRITCHLOW
Chief Fuels and Lubricants Engineer
Rolling Mill Section
Industrial Products Engineering
and
ROLAND W. FLYNN
Staff Engineer
New York Division
Gulf Oil Corp.
Pittsburgh

corrosion of the steel phase of the wire rope under the variety of operating conditions encountered. Another very important function of a wire rope lubricant is to protect and preserve the hemp core when this type of core material is used. The core is the supporting member of the rope, with two general classes of material being used—metallic and fiber. Metallic cores may be a wire strand or a wire rope and lubrication-wise may be treated the same as the completed wire rope. The most generally used fiber-type core is hemp which imparts to a wire rope better flexibility but less compressive strength than a metallic core. This type of core presents lubrication and protection problems that are different from those of the steel phase of the rope.

An ideal wire rope lubricant should perform a triple function, that of reducing and equalizing friction, preventing steel corrosion, and protecting and preserving the hemp core when one is used.

Testing Procedure—To design a lubricant that will satisfactorily fulfill these three functions requires that the relative importance of these functions be analyzed. Importance of the lubricant's lubricating function in reducing friction and equalizing load distribution has been demonstrated by a series of tests on a ⅞-inch, 6 x 19, right lay, Warrington wire rope, whose breaking strength was 45,600 pounds. Three samples of the same rope, representing full lubrication, core lubrication only, and no lubrication, were subjected to a pulsating tensile load varying between 10,000 and 20,000 pounds as limits until failure occurred. The test specimens were especially laid-up for this work. The specimen representing full lubrication had a heavy bodied petroleum-type lubricant applied to each strand on the stranding machine and again to the strands and core on the closing machine. The specimen representing core lubrication only had the same type lubricant applied to the core only on the closing machine; no lubricant was applied to the individual wires on the stranding machine or the strands on the closing machine. The specimen representing no lubrication was laid up dry; no lubricant was applied at either the stranding or closing machine and the core contained only cordage oil used by the manufacturer in spinning the hemp fibers. The machine used was a tensile machine modified to produce a pulsating load between controllable upper and lower limits at approximately 400 pulsations per minute.



Results of Test—Although some wires were broken in every strand of the unlubricated rope, principal failure was confined to two strands, an indication of poor load distribution. The rope with only the core lubricated failed in a similar manner but some benefit was obtained from the lubricant that was squeezed from the core; more pulsations were endured before failure because the strands were more uniformly stressed. The fully lubricated rope, in which both core and strands were lubricated failed to an almost equal degree in all six strands but only after it had endured nine times as many pulsations as the rope without lubricant and better than 2.5 times as many as the rope with only core lubrication.

These tests were of relatively short duration so that corrosion was not a factor. There was no evidence of either internal or external corrosion on the test specimens. It is, therefore, apparent that unless friction is equalized and reduced to a minimum by means of a suitable lubricant, wire rope service life can be appreciably shortened. This applies particularly to ropes that operate in more or less protected indoor areas where conditions are not as conducive to corrosion as outdoor installations.

It's a Two-Step Program—A two-step procedure is required to reduce friction and corrosion to a minimum and to improve core protection and preservation. First is application of the most suitable lubricant during the wire rope's manufacture and second, application of the proper lubricant to the rope in the field. Both steps are extremely important and have a decided effect on the rope's service life.

From an application point of view, step one is the easier to handle because, obviously, conditions in a wire rope mill are far more favorable and uniform than in the field. Further, it is possible, during the laying up of a strand or the closing of strands into rope, to apply a lubricant so that each wire in the rope is thoroughly covered.

A suitable lubricant for application to wire rope at the wire rope mill should:

1. Be capable of providing a tough lubricating film on the individual wires because of the high unit pressures existing between wires and strands.

2. Provide a strongly adhesive film and be highly resistant to the washing action of water and other

External corrosion on a wire rope

corrosive fluids so that good corrosion protection is provided for long periods of time.

3. Protect and preserve a hemp core by reducing wear between hemp fibers and steel wires and by failure to support bacterial growth in the hemp; it should not harden or soften the core fibers.

4. Not chip, peel, or crack at temperatures down to about minus 15° F thereby exposing the steel wires to the atmosphere and the possibility of corrosion.

5. Have sufficiently high melting point to prevent dripping in warm weather or in hot storage buildings.

6. Solidify rapidly providing a smooth, uniform film over the wires and strands when applied hot in its fluid state at the rope mill.

Heated to 300° F—There are available several especially compounded heavy bodied petroleum compounds having the above characteristics. One method for applying such a material to individual wires as they are laid up at the stranding machine is shown in an accompanying illustration. Lubricant in this instance is heated in a separate reservoir and pumped to the nozzle shown above and slightly ahead of the closing die. In this manner each wire is thoroughly coated with lubricant. The lubricant is heated to temperatures varying from approximately 200 to 300° F, depending on its characteristics. It should solidify and set up forming a smooth uniform film over the wires before the strand reaches the winding reel.

Applying a suitable lubricant to a hemp core is a little more complex inasmuch as there are usually two materials involved. In making hemp rope for wire rope centers, a light cordage oil is used as an aid in spinning the hemp fibers into strands. Usually a straight mineral oil having a viscosity of about 100 SSU at 100° F is used. About 4 to 8 per cent of the finished core's gross weight is cordage oil which has practically no value as a wire rope lubricant. Some cordage manufacturers lubricate the hemp core with the same or a similar material as used on the wire rope by immersing the core in a bath of wire rope lubricant in its fluid state for a period sufficient to insure thorough impregnation. About 14 to 16 per cent of the gross weight of the finished core is then wire rope lubricant.

There are cordage manufacturers who may use materials that differ slightly from regular wire rope lubricants in their make-up. Whatever material is used should be designed to protect and preserve the hemp core, minimize or eliminate the action of bacteria, protect the steel strands imbedded in it from corrosion, and reduce the wear between fiber strands and steel strands. In many instances the lubricant or additional lubricant is applied to the hemp core by the wire rope manufacturer.

Manufacturer's Lubrication Important — Most important phase of wire rope lubrication is at the point of manufacture, because it is only when individual wires are being laid up into strands and strands closed into finished wire rope that thorough lubricant coverage of all of the rope's components can be secured. Many wire ropes get no further lubrication. In some cases it is not necessary. For most wire rope applications, however, it is decidedly necessary but due to a lack of knowledge of the importance of relubrication or a lack of suitable relubricating facilities, that many are neglected in the field.

Wire ropes in the field need to be relubricated for the very simple reason that the lubricant applied at the wire rope mill does not last forever, and contrary to some beliefs the hemp core is not an endless reservoir for supplying lubricant to the rope during its useful life. A hemp core in a wire rope in service will gradually dry out if its lubricant content is not replenished. A dry core will gradually disintegrate causing rope collapse; it can be quite abrasive causing severe wear on the wires imbedded in it; and also has a tendency to absorb moisture which will lead to rapid corrosion of the steel phase of the rope. A strand removed from a wire rope used for hoisting service is shown on the preceding pages. The worn and corroded phase of this strand was the part imbedded in the hemp core. When the core was examined it was found to contain only 3.3 per cent by weight of lubricant; for all practical purposes it was dry. Had a lubricant been used that penetrated to the rope's core, this condition might have been avoided.

Relubrication Hints — For best results wire rope should be cleaned before the lubricant is applied, if possible, so that all dirt, dust, and other contaminating materials are removed from the valleys between the strands and the space between the outer wires. The cleaning can be accomplished with wire brushes and/or kerosene, not with steam. It is realized that cleaning a wire rope in service is, many times, impractical but the recommendation is made because far better protection is secured on any metal surface if it is properly prepared to receive a lubricant.

In general, the best lubricant to use for relubrication of wire rope in the field is the same type used on the rope when it was manufactured. However, due to the arrangement of most rope applications and in view of the heavy bodied nature of these lubricants it is practically impossible, in many cases, to apply them in the manner in which (*Please turn to Page* 132)

Condensation of paper given before the 1951 annual meeting of The American Society of Lubrication Engineers, Philadelphia. Full text will subsequently be published in *Lubrication Engineering*, the society's official journal.

By GUY HUBBARD
Machine Tool Editor

Seen and Heard in The Machinery Field

CHAIN FEEDS: From time to time some of the oldest ideas in machine tool design—after lying dormant for decades—eventually come to life again in the form of successful modern mechanism. A case in point is the "chain feed", commonly used on planers and lathes more than a hundred years ago, then eclipsed by rack-and-pinion and lead screw and nut feeds, now revived on continuous broaching machines and surface grinders.

Chain feed lathes and planers of a century ago looked good on paper but their practical value was low because of the crude chains and sprockets of that era. In other words, they were ahead of their time—just as were the remarkable machine tools sketched out by Leonardo da Vinci about the time when Columbus was discovering America.

Accurate roller chains and plate type silent chains and mating sprockets now commercially available are a far cry from the crude block chains and welded link chains which made the original chain feed lathes and planers so jerky and erratic in action. Preloaded chain and sprocket systems now can be built to operate just as satisfactorily as they look on paper—and they can be devised to combine simplicity of design with low cost.

These chain feed systems for machine tools should prove especially interesting to designers faced with problems of designing machines which can be built in minimum time and with economy of parts to meet defense production needs. Designers today not only have the advantage of ready-made precision chains and sprockets, but also they have available the consulting engineering service of manufacturers of chains and sprockets. Such pooling of resources and brain-power always works to everyone's advantage.

ILLEGIBLE DRAWINGS: Working drawings often times have been described as "the written language of the machine shop". In this day and age when the techniques of making and reproducing drawings have been developed to such high degrees, it is surprising to find so many hard to read prints in use in otherwise well-equipped shops.

There may have been more excuse for this condition back in the days when blueprints were made by the slow process of rolling the printing frame outside the drafting room window on a sunny day. Although those old-fashioned blueprints did eventually become tattered and torn in service, it was true that most of them were contrasting and clear when fresh and new. That is more than can be said of some of the modern prints—too many of which get off to a poor start by being made from inadequate originals.

The more unskilled the rank and file of shop workmen and women become—as in the current worker shortage—the more important it becomes for the language of the shop to be clearly inscribed, clearly reproduced and for fresh copies to be provided as rapidly as older ones wear out in service. This may mean checking back to the source to make sure that draftsmen are using proper pencils and paper and enough care and elbow grease to produce printable originals. It may mean refresher courses for those who operate the fine printing equipment with which practically all engineering departments now are equipped. It may mean a general overhauling of the system of distributing and replacing prints throughout the production and assembly departments.

No successful company today allows cutting tools to be used until they fail through lack of sharpening. No company allows operators to work such long hours that they spoil work because of physical and mental fatigue. By the same token, there is no excuse for use of dull, overworked prints in otherwise efficient factories. It costs infinitely less to scrap worn out prints than it does to scrap spoiled work.

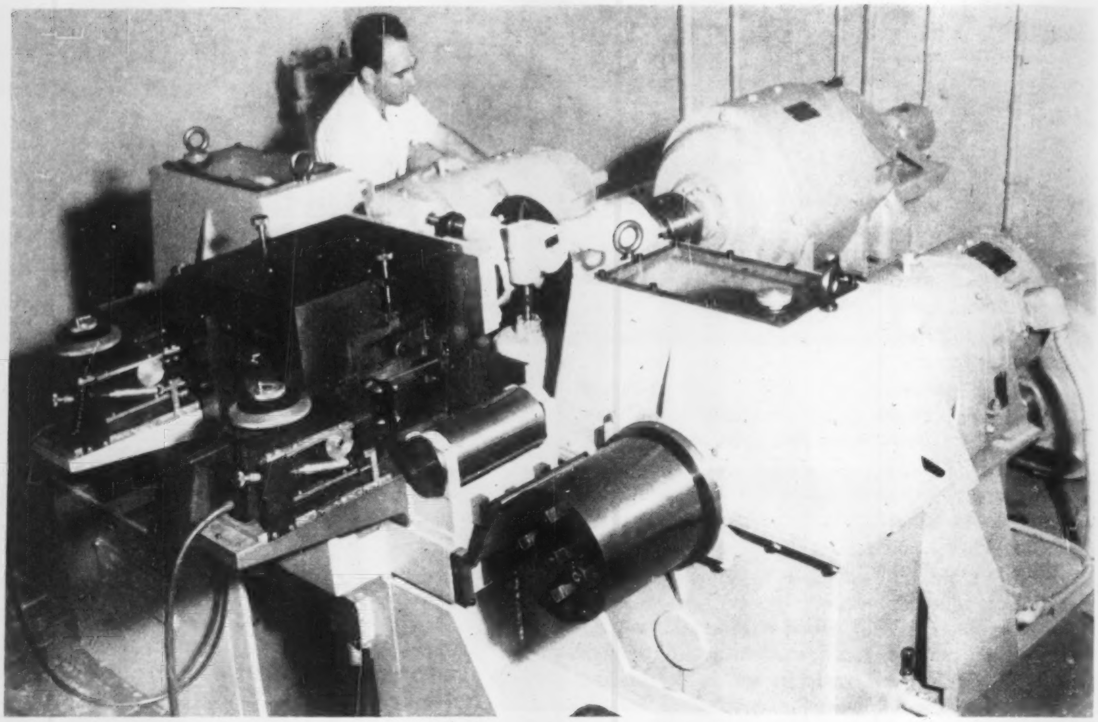
NATURAL OR TECHNOLOGICAL? That old saying to the effect that man can't improve on nature is a highly debatable one in the field of machine design. As far as shapes and streamlining are concerned, there does seem to be a tendency for machines to develop from unnatural to natural forms as time goes on. Submarines grow more and more to resemble high-speed fish and airplanes trend toward more birdlike forms.

Mechanically, however, the trend seems to be away from the natural toward mechanisms which have no exact counterpart in nature. For example, early submarines were "sculled" along by mechanical oars patterned after the tails of fish—whereas modern ones are propeller-driven. Early attempts at mechanical flight were made with craft with flapping wings. Then came the propeller and eventual successful flight. Now we have jet propulsion which departs still further from nature.

Materials handling devices applied to machine tools and presses have tended in a similar direction—originating oftentimes as counterparts of human arms and hands but developing eventually into mechanisms utilizing air suction of blowing effects, vibration feeding, etc. In many cases natural gravity feeds now prove to be too slow and feeding has to be hurried up mechanically to keep pace with modern high speed production machinery.

It is natural for designers faced with problems of mechanizing what have been hand operations, first to attempt to solve those problems by designing mechanical hands. Thus, early sewing machine inventors attempted to build machines which passed conventional needles back and forth through fabric. They didn't get anywhere.

Finally Elias Howe dreamed up the idea of his unnatural eye-pointed needle which sewed seams with interlocking loops of thread without having to pass completely back and forth through the fabric. This certainly wasn't the natural or human way to sew. Nevertheless, it brought into being practical sewing machines as we know them today—including industrial machine which make 5000 stitches per minute.



Cold strip mill of the Sendzimir type for rolling magnetic alloys down to 0.0005-inch thickness

Precision Rolling Thin-Gage Magnetic Alloys

CAPABLE of rolling ultrathin alloy ribbon stock in widths up to 8½ inches from a maximum thickness of 0.025-inch down to 0.0005-inch is a new Sendzimir cold strip mill, engineered by Armzen Co., built by Waterbury-Farrell and installed in the Magnetic Materials Division of the Naval Ordnance Laboratory at White Oak, Md. The mill is of the reversing type, with two small diameter work rolls, four driven backup rolls, and special back up "saddles" and roller bearings. All of the rotating units are completely encased in oil.

Five motors supply the power for the work rolls and rewind drums, with tension being maintained on both ends of the material as it is being rolled. Practically an entire room is required to house automatic electrical control equipment that is used for regulating tension, pressure, gage, speed, starting and stopping.

The laboratory processes a number of types of iron-nickel and iron-cobalt-nickel alloys for use in magnetic amplifiers, now used widely in control equipment to replace vacuum tubes. These amplifiers have cores built up of layers of the thin-gage magnetic alloys. Efficiency of the amplifier is in part a function of the thinness of the laminations used to make up the magnetic amplifiers.

The Magnetic Materials Division operates a full complement of melting, casting, rolling, heat treating and physical and chemical testing equipment. Other rolling units include a Sendzimir hot planetary mill (to be installed), and a small Rohn bench mill for precision rolling of widths under 1½ inches, the latter brought in from Germany.

Powder Washing Process Ready

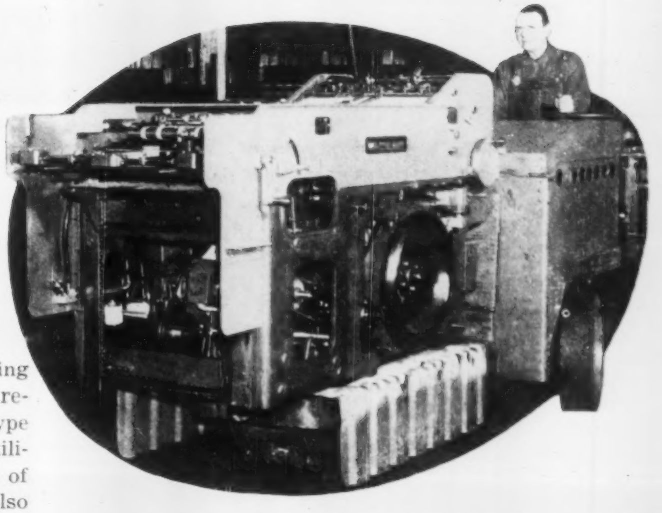
Sand encrustations, fins, pads, chaplets or chill nails, and other forms of excess metal can be removed from castings quickly, easily, and economically by means of an oxyacetylene method recently developed by Linde Air Products Co., a division of Union Carbide and Carbon Corp.

The new process, called powder-washing, utilizes a special Oxweld FSC-1 blowpipe, equipped with external powder-washing attachment. With this apparatus an iron-rich powder is fed through oxyacetylene preheat flames into a low-velocity oxygen stream where it burns and produces superheated liquid iron oxide. Heat from the combustion of the powder and slag simplifies and speeds removal of metal and metal-sand mixtures. Wherever the powder-fed flame is directed against a casting, the metal surface is brought quickly to kindling temperature, and then it is oxidized and blown away by the oxygen stream.

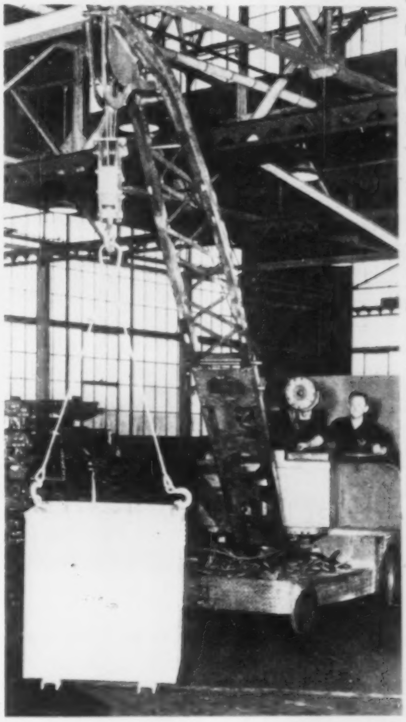
After powder-washing, the surfaces of castings are left smooth, clean, and to close tolerance. There is no undercutting, and no torn metal.

Industrial Trucks

Speed Production, Plant Maintenance



2730-pound press is moved from production line by lowlift platform truck



This 6000-pound capacity crane truck is lowering a 600-pound transformer which it has just unloaded from a highway truck

ADVANTAGES of handling, moving and storaging material by powered industrial trucks, are being realized at the Elizabeth, N. J., plant of American Type Founders. Conservation of man-power, greater utilization of man-hours, and savings in time are some of the advantages. Greater use of storage space also has been realized by using fork lift trucks, while in the movement of heavy machinery a mobile, powered crane truck does the job. More recently use has been made of powered hand trucks.

The plant's fleet of powered industrial trucks consists of four lowlift platform trucks, three fork trucks, with lift heights ranging from 7 to 11 feet, a 6000-pound capacity crane truck, with a 21-foot telescoping boom, and four 2500-pound capacity powered hand trucks.

Considerable use is made of the trucks in handling and moving presses from point to point within plant buildings, and also in shipping operations. One item of savings is in the movement of presses into highway trucks for shipment.

Under previous manual methods, two millwrights would handle skidded presses from the floor into the shipping area and on to a truck by means of rollers, with a truck and driver doing the pulling. It used to take between 5 and 6 hours for the job. Fork trucks do the job in about 10 minutes from floor to final deposit in a highway truck. It takes 20 minutes for a fork truck to load into a box car.

The powered crane truck does maintenance work and moves heavy machinery about the plant. It also unloads heavy material from gondola cars and unloads and loads flat-bed trucks. The crane truck also handles loads of steel bar stock, castings, etc.

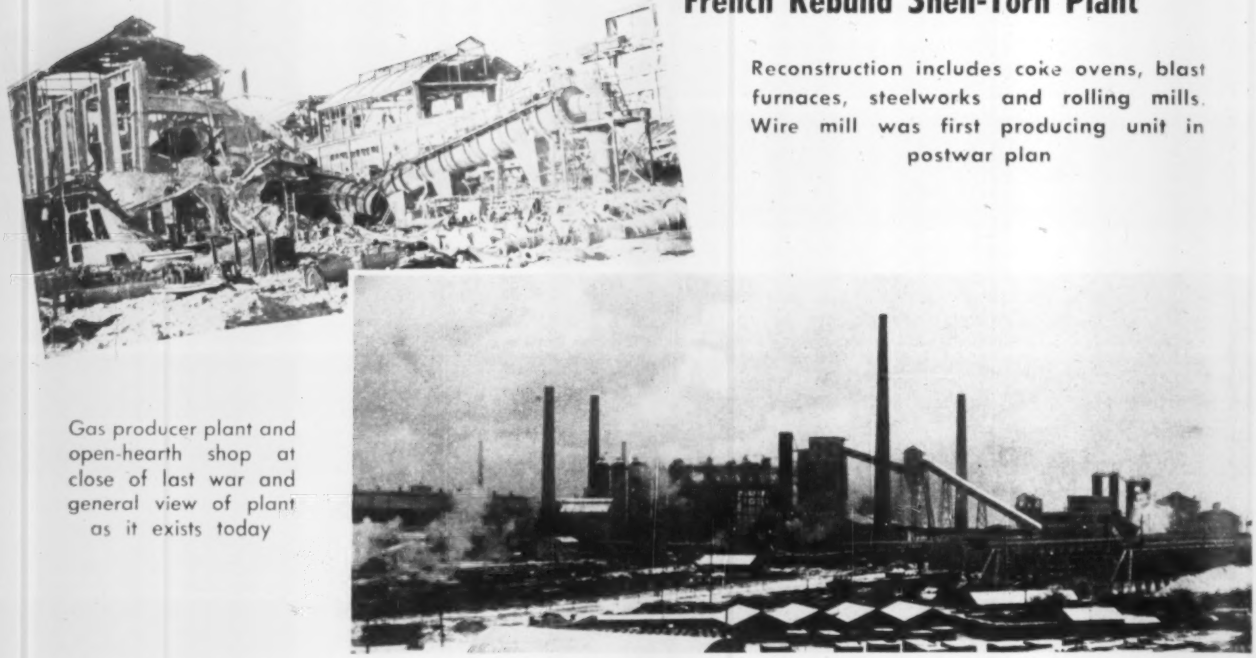
Little use is made of pallets at the ATF plant, as the firm's output does not lend itself to palletization. Wooden or metal skids, are relied on exclusively. Jigs and fixtures, weighing up to 400 pounds are handled on wooden skids into and out of storage racks by fork trucks. Heavy iron cylinders, which later will be machined into rolls are handled by means of the lowlift trucks employing a special type of iron-legged wooden skid. These have built-on chocks to prevent movement of the rolls. Small chain hoists, moving within a limited area on overhead rails, handle these rolls on and off the skids. Both heavy-duty, rider-type platform trucks, and smaller powered hand trucks, also handle smaller items of material in tray- or box-type skids.

Type metal in pigs is received in special boxes measuring 6 x 6 x 20 feet in box-car loads. The pigs are manually loaded on double-faced, two-way wooden pallets in loads of 5000 pounds. Through use of the powered fork trucks, an entire shipment can be handled by two men in the course of a day. Under manual methods each pig was individually loaded onto small, manually moved, four-wheeled dolly-trucks, taken to the warehouse and there manually placed in storage. The operation took a four-man crew at least two days to perform.

Castings for press frames, weighing up to 1500-pounds each, are moved from the receiving yard into the "back shop" for machining and then back across the yard area into the assembly and finished product building. Distance between the two shops is approximately 100 yards; the run calls for the truck to negotiate two ramps, each having 20 per cent grades.

French Rebuild Shell-Torn Plant

Reconstruction includes coke ovens, blast furnaces, steelworks and rolling mills. Wire mill was first producing unit in postwar plan



Gas producer plant and open-hearth shop at close of last war and general view of plant as it exists today

FIRST of two reconstructed blast furnaces at the Mondeville works of Societe Metallurgique de Normandie, near Caen, France, was blown in Dec. 11, 1950. Both stacks are to supply the pig iron required by the integrated steelworks now under construction. The Mondeville iron and steelworks were almost completely wrecked at the time of the invasion of Normandy in June 1944.

The present reconstruction plan covers three batteries of coke ovens, with modern coal and coke handling equipment, and by-product plant; two blast furnaces, four basic bessemer converters, three open-hearth furnaces, a blooming mill, reducing mills, a continuous wire mill, with galvanizing plant and a fully-equipped power station of the latest design.

The blast furnace now in operation has much the same lines as the one which it replaces. The hearth diameter is about 15 feet, its capacity ranging from 450 to 500 net tons per day. The second furnace, not yet completed, is being redesigned by Societe d'Etudes et d'Entreprises Siderurgiques, Paris. Its capacity will also be approximately 500 net tons per day. When completed, the blast furnace plant will be capable of producing about 400,000 net tons per year.

Steel production will be 480,000 net tons per year, of which 350,000 tons will be produced by basic bessemer converters.

Rolling mill facilities will comprise a four-stand 35-inch reversing mill; a blooming mill, for rolling blooms, billets and heavy sections; and a three-stand 18-inch mill for lighter sections. Salvaged material has been used for reconstructing these mills. The merchant mills will be essentially modern and will include the continuous wire rod mill, already in operation, with a capacity of 130,000 net tons. Wire drawing plant began operating in February 1945, and was the first producing unit of the postwar plan. It now comprises 15 large and medium and five small wire drawing machines. The plant for galvanizing wire started operations in August 1948.

New Engine Uses Natural Gas

Natural gas where available can be utilized in a new engine developed by Cummins Engine Co. Inc., Columbus, Ind. Designed primarily to take advantage of the plentiful supply of natural gas in the oil producing areas of the nation, the new engine—model LR-600-Gas—is classified in the medium speed field because of its 1100 rpm rating.

It will be used principally to provide power for oil well drilling rigs. However, Cummins officials foresee other applications wherever there is an abundance of natural gas.

They point out that commercial butane also may be used. Only an approved butane vaporizing and regulating attachment is needed.

Its diesel counter-part has a maximum rating of 300-hp at 1100 rpm and a compression ratio of 13.5 to 1. Conversion units have also been developed to change the diesels to gas operation and the gas engines to diesel operation.

Operators of their diesels are being urged to practice protective maintenance which they say is not only important in reducing operating costs, but especially valuable during this period of critical material shortages. It should include all periodic and progressive maintenance operations needed to obtain maximum periods of trouble-free service at the lowest possible cost.

2+2=5

A CONTRIBUTION TO PRODUCTION ECONOMICS

You can figure greater yield from your cold rolled strip steel — not by using the headlined arithmetic, but through the production economies offered by CMP Thinsteel. First, you are assured maximum number of parts per ton because Oversize Variation, bothersome source of footage loss in ordinary flat rolled steel, is kept to the minimum by CMP's precision rolling processes. And second, if you are using Thinsteel it may be possible to reduce gauge without sacrificing strength and gain up to 50% in number of feet (or parts) per ton. For example:

more than the usual — THINSTEEL stretches yield

2″ x .015″ averages approximately
19,600 feet per ton

2″ x .010″ averages approximately
29,400 feet per ton

Thus, a one-third reduction in thickness will give you a 50% increase in footage.

Demand for Thinsteel far exceeds supply these days and defense order requirements limit availabilities even to old customers, but where CMP Thinsteel can be furnished we suggest this practical approach to stretching supply—wherever possible reduce gauge thickness and get an automatic dividend in increased footage available for productive purposes.

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SCREWS • BOLTS • NUTS
Industrial Fasteners and Holding Devices

British Study Continuous Casting

A series of continuous casting experiments have been made in England, according to the British Iron & Steel Research Association, in which the mold friction and total heat transfer through the mold were measured for a range of values of the steel superheat and the casting speed. It was shown that casting speeds in excess of about 2½ fpm were likely to cause failure by tearing inside the mold, and that there was a fairly wide range of superheat in which successful casts could be made.

The total heat transfer measured showed that the area of thermal contact between the mold and ingot surface was a small fraction of the total mold area, and that cylindrical molds are inefficient for heat extraction from steel. Some 2¼-inch diameter round sections have been rolled to 1 inch and the surfaces then were of good commercial quality.

An electric graphite resistor furnace has been built for melting up to 150 pounds of steel and has proved much better than the gas and oil furnaces heretofore used. The steel is almost free from slag and no carbon pickup has been experienced.

In occupied Germany 6-inch rounds are being continuously cast at the rate of 6 fpm for conversion into tubing. Small continuous casting plants are being built in various locations in this territory.

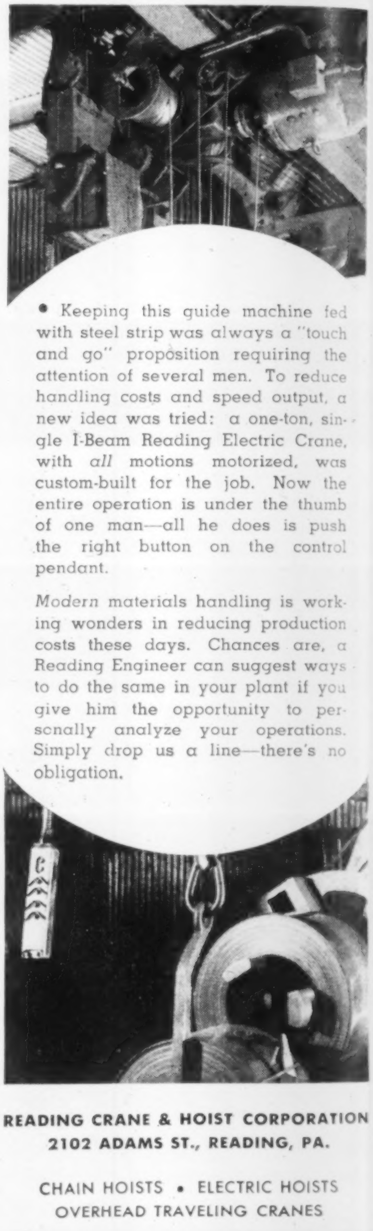
Parts Straightened Readily

Roller mounted spring loaded work supports with adjustment to accommodate many parts, movable resistance blocks with replaceable wear plates, special ram nose and dial indicator with stand are ideal accessories for the accurate straightening of small and medium size shafts on a 10-ton type PGRF gooseneck straightening press made by Oilgear Co., Milwaukee. In operation, the shaft is loaded between the two centers, the spring support is clamped in place and the control lever depressed to bring ram nose down for the straightening operation.

The spring loaded fixture keeps the shaft off the resistance blocks during the gaging portion of the cycle so that the part can be easily turned on centers. The hand lever controls the ram pressure, ram speed, ram travel and direction of ram movement and thus simplifies the straightening of identical pieces. The press stroke is 18 inches, the daylight 24 inches, the throat 8 inches and the detachable table 36 inches. A 10-hp motor is direct connected to the type

MATERIALS *Handling* IDEAS

ALL MOTIONS MOTORIZED
To Reduce Costs



• Keeping this guide machine fed with steel strip was always a "touch and go" proposition requiring the attention of several men. To reduce handling costs and speed output, a new idea was tried: a one-ton, single I-Beam Reading Electric Crane, with *all* motions motorized, was custom-built for the job. Now the entire operation is under the thumb of one man—all he does is push the right button on the control pendant.

Modern materials handling is working wonders in reducing production costs these days. Chances are, a Reading Engineer can suggest ways to do the same in your plant if you give him the opportunity to personally analyze your operations. Simply drop us a line—there's no obligation.

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DH-1211 two-way variable delivery pump with hydraulic servo-motor lever control.

New Pipe Conserves Stainless

Because nickel and other alloys are in short supply much emphasis is being placed on light-walled schedule 5 stainless steel pipe. This new pipe, produced by several mills, recently received the approval of the correlating committee of the American Standards Association. When compared with heavier pipe, such as schedule 40, the new pipe schedule provides two or three times the pipe footage per pound of stainless steel. Thus, in addition to conserving critical alloys, it gives savings in cost for material. Made from the standard stainless analyses as set up by the American Iron & Steel Institute, the pipe offers full corrosion resistance.

From the strength standpoint, schedule 5 stainless pipe is satisfactory for the vast majority of applications in industry. It will provide an excellent margin of safety with working pressures up to 150 psi. In the smaller diameters, below 2-inches OD, working pressures can be considerably higher.

Comparison of the wall thickness of schedule 5 with schedules 40 or 10 stainless pipe shows that the new schedule gives a considerably larger inside diameter, and thus a larger internal cross-sectional area. The outside diameters of the pipes are identical, which facilitates the use of schedule 5 with existing installations. Alloy Tube Division, Carpenter Steel Co., Union, N. J., is making available a set of data sheets giving pertinent information about the new pipe.

Defense Work Study Continues

Continuing its investigation of defense work possibilities for the porcelain enamel industry, the government business committee of the Porcelain Enamel Institute points out that the high degree of heat resistance of porcelain enamels formulated for such services should find many applications in the solution of heat-corrosion problems for defense products. Several types of porcelain enamel coatings have been developed for use where continued exposure of metal parts to high temperature necessitates protection against corrosion. Some of these applications include: Exhaust pipes and mufflers of internal combustion engines, heat exchangers and furnace flues.

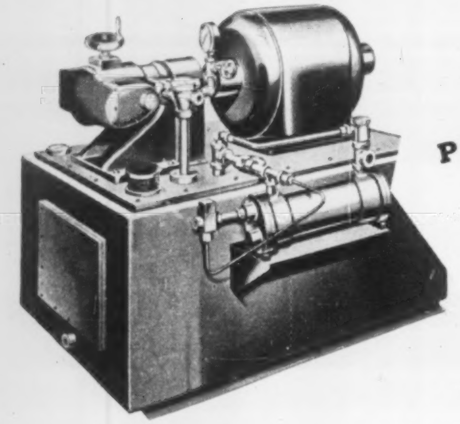
For the most part, these coatings are manufactured from "strengthened" versions of the frit used in commercial enameling ground coats. Large amounts of refractory compounds are added and a blend of two frits is used so that, by varying the proportions, the firing temperature of the enamel can be varied. Suitable for low-carbon steels, stainless steels, and alloy steels this type of coating generally matures at around 1600° F.

Addition of refractory materials to the frit also increase the resistance to thermal shock. Submarine exhaust pipes are cited as an example of the rigorous high-temperature, thermal-shock conditions under which the enamel coatings have been used.

According to the PEI committee, porcelain enamel coatings also have been developed which can be fired at temperatures as high as 1900° F. These coatings are used for protection of alloy steels, which can be fired at extremely high temperatures without danger of warpage, and have been used successfully on gas turbine combustion chambers.

The committee cautions that a porcelain enameler should be consulted on the design and fabrication of parts to be porcelain enameled, in order to assure satisfactory coating.

to eliminate risk of overheated hydraulic oil



DENISON PLAYS IT SAFE WITH ROSS EXCHANGERS

"CAUTION: Temperature of oil should never exceed 150° F. for most efficient operation." That's the advice and the warning of Denison Engineering Co., Columbus, Ohio, producer of Denison High Pressure HydrOILic Pumping Units. Excessive temperature risks breakdown of vital oil properties . . . pump slippage resulting in lost capacity.

Therefore, where any Denison pumping unit is to be operated at half or more of its maximum pressure, oil cooling is recommended . . . and in such cases, fully standardized Ross Type BCF Exchangers are offered as built-in accessories. For Denison, like most builders and users of hydraulically operated equipment, knows that all-copper and copper alloy Ross BCF's are the most reliable means of essential temperature control.

ILLUSTRATED BROADSIDE displays numerous hydraulic applications of Ross Exchangers. Write.

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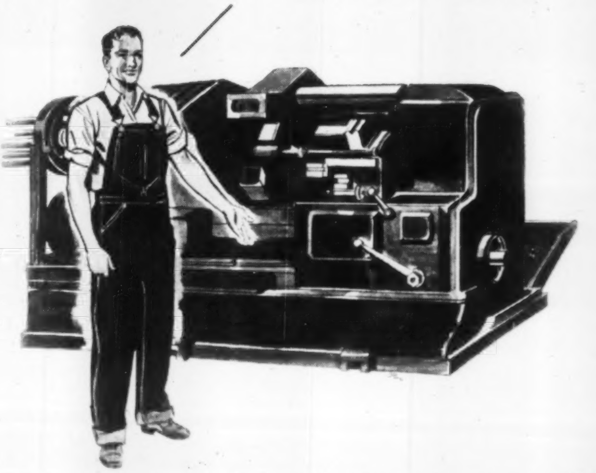
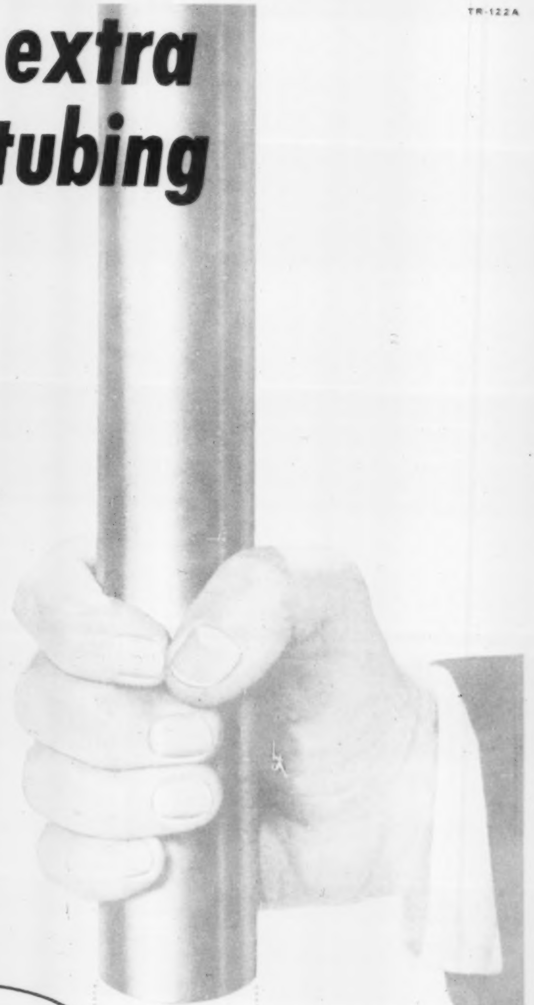
TR-122A

It's like getting an extra machine with this tubing





The output of ring-shaped and cylindrical parts can be stepped up as much as 100% by machining them from Rockrite Tubing. This means one automatic screw machine has the production of two. It's just as though an extra machine was added for each one on the line. **Naturally, machining costs are cut as much as 50%.** The reason? Rockrite Tubing is *compression-sized* to much closer tolerances than standard mechanical tubing. There's less metal to cut away, less finishing — perhaps none on outside or inside.

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CALENDAR
OF MEETINGS

June 24-26, Alloy Castings Institute: Annual meeting, The Homestead, Hot Springs, Va. Institute address: 32 Third Ave., Mineola, N. Y.

June 24-27, National Association of Cost Accountants: Annual international cost conference, Palmer House, Chicago. Association address: 505 Park Ave., New York 22.

June 25-29, American Institute of Electrical Engineers: General summer meeting, Royal York Hotel, Windsor, Ont. Institute address: 33 W. 39th St., New York 18.

June 25-29, American Society of Mechanical Engineers: Annual conference & exhibit, Oil and Gas Power Division, Baker Hotel, Dallas. Society address: 29 W. 39th St., New York 18.

July 13-14, Truck-Trailer Manufacturers Association Inc.: Summer meeting, Edgewater Beach Hotel, Chicago. Association address: 1024 National Press Bldg., Washington 4.

Miniature Bearings Made

Smaller than the head of a common pin, a miniature ball bearing made by Miniature Precision Bearings Inc., Keene, N. H., is bidding for the jewel bearing market. As the latest addition to the company's line of radial, pivot, thrust and ball bearings the 1.5-mm outside diameter ball bearing is the smallest of its type (largest has a ⅜ inch outside diameter).

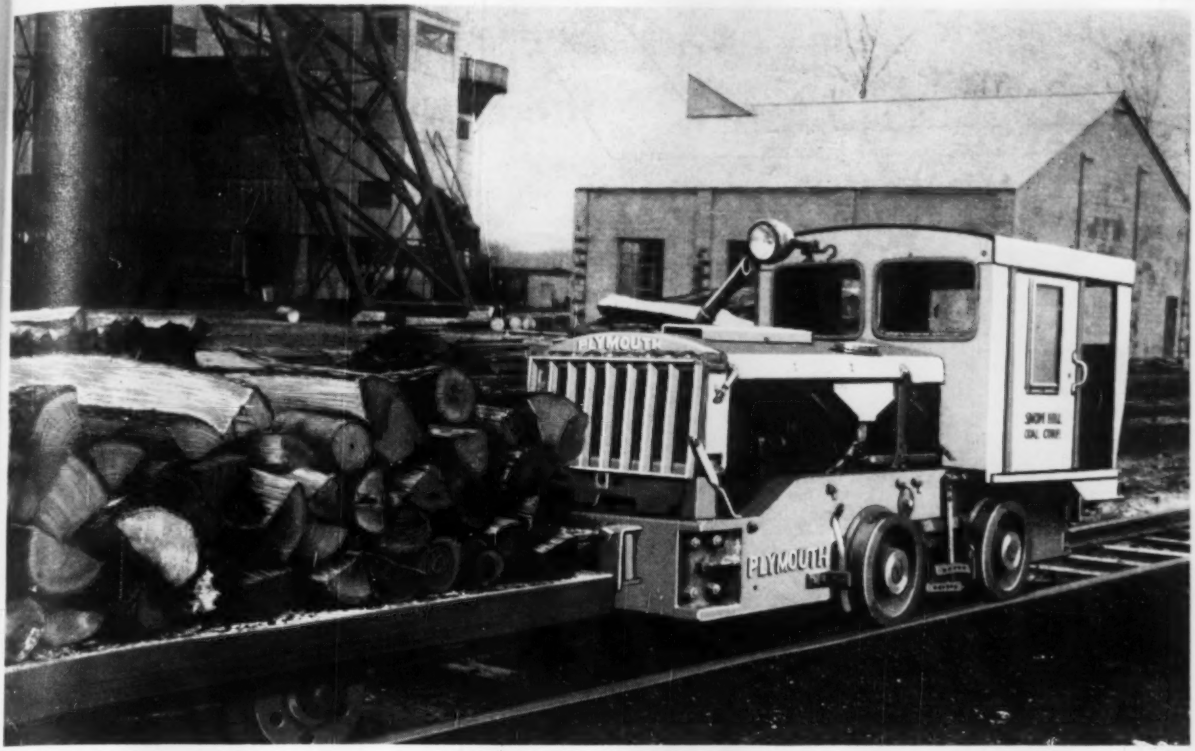
Accuracy of production demands tolerances be held to plus zero and minus two ten-thousandths of an inch, so measurements are made with instruments that are accurate to 20 millionths of an inch. To permit heavy loads under severe conditions of shock and vibration, the raceway wall is designed so its mass is at points of greatest strain. The pivot shaft holds the balls in place. Miniature bearings are used in precision instruments, textile rollers, servo mechanisms, gyros and transits.

SKF Offers Engineering Text

Available to engineers, product designers, maintenance men and engineering students for the first time, is the 270-page book, *Ball and Roller Bearing Engineering*, published by SKF Industries Inc., Philadelphia 32.

First published in 1945, it has since been regarded as the most authoritative material ever published on the subject. Text covers in technical detail such subjects as bearing types and nomenclature, capacities, selection, design, installation, maintenance, causes of failures, and load calculations.

In the interest of the present defense economy, SKF is offering copies to interested individuals in the continental United States only at the special price of $1.75.



Five tons of hauling economy!

Plymouth fuel and maintenance economy are playing a big part in cutting costs at the Green Valley mine of the Snow Hill Coal Corporation, Terre Haute, Indiana.

In operation for 3½ years moving coal and all timbering materials for the mine, Snow Hill's 5-ton gasoline-powered Plymouth Locomotive has required very little outage time for repair and maintenance.

"That locomotive really keeps materials moving at the mine," reports G. F. Bieler, general superintendent. "It works betwen 84 and 90 hours a week and averages just six gallons of fuel a day. Yes sir, our Plymouth is doing a fine job!"

Plymouth Locomotives are built in 3 to 70-ton sizes, for narrow and standard gauge track. Find out now how you can speed production and cut costs with "Industries' Favorite Switchers." Write for new catalog today.

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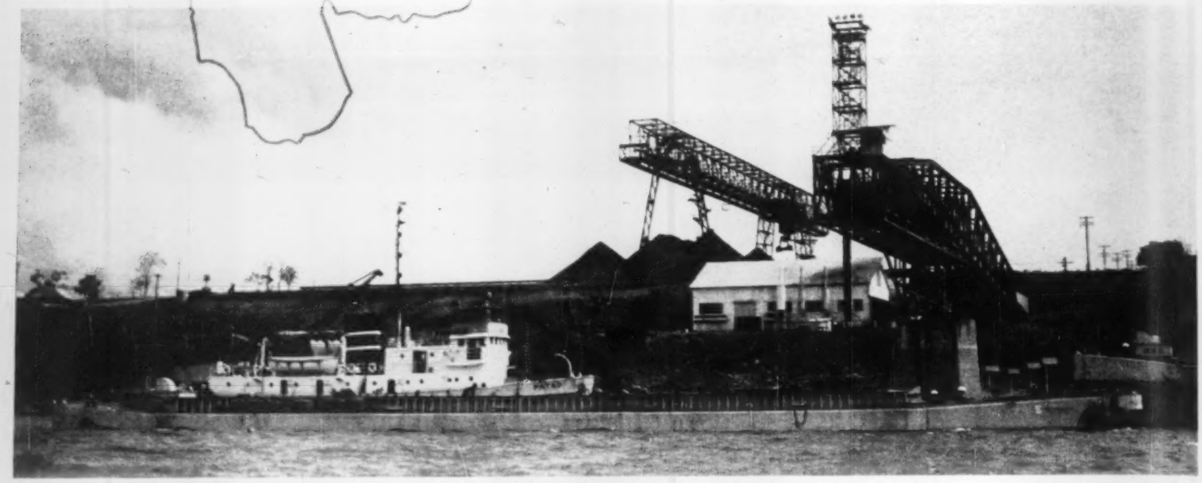
VENEZUELA
Gulf of Paria

Bethlehem's Venezuelan Ore Flows North

Three million tons of high grade hematite is the expected annual yield of Bethlehem's El Pao mine. The new supply will supplement iron ore shipments from Chile and other foreign sources



Tug and loaded barge at Palua, on the Orinoco river. Large steel structure extending out over the river is the cantilever which carries the belt conveyor used in loading the barges. In the background is an ore bridge under which is storage space for 800,000 tons of ore

CULMINATING a 15-year period of exploration and development, was the recent arrival of a cargo of iron ore from Venezuela to Bethlehem Steel's Sparrows Point, Md., plant. When full production is realized, the deposit of Iron Mines Co. of Venezuela at El Pao, State of Bolivar, should yield approximately 3 million tons annually. With but slight changes in layout and equipment, the mine's production could be increased to 5 million tons of ore per year.

The new supply will supplement iron ore shipments from Chile and other foreign sources and will help to provide the large additional tonnage of ore needed as a result of the company's current 2,600,000-ton increase in annual steelmaking capacity.

Preparatory work required in bringing this new mine into production included the construction of a river loading station and a deep-water port, and building of a fleet of shallow-draft vessels, tugs and barges. Three new communities were created in the wilderness, a railroad and a highway pushed through the jungle, and several hundred miles of river sounded, charted and marked with navigational aids.

Discovery of the El Pao deposit is credited to a native prospector who, in 1926, found a large outcrop of rich iron ore on the summit of a hill known as El Florero. At that time El Pao was nothing but undeveloped jungle, with a few scattered huts, about 30 miles south of San Felix, a tiny village situated near the confluence of the Caroni and Orinoco rivers.

After some preliminary exploratory work Bethlehem acquired the concessions in 1933 and organized the Iron Mines Company of Venezuela to develop and operate them. At first 22 concessions were acquired. Six of these were later relinquished, leaving the company with a total of 16 concessions covering an area of nearly 20,000 acres.

Property Surveyed in 1937—A general survey of the property was started in 1937. This included exploration and mapping, preparation of engineering plans and general layouts for camps, shops, and a railroad and a highway between the mine and the present port of Palua on the Orinoco river.

A plan was adopted which involved shipping the ore by rail from the mine at El Pao to Palua on the Orinoco river, for storage or loading into shallow draft vessels or barges. These take the ore down the river to the transfer station at Puerto de Hierro, a distance of about 230 miles. Here the ore is transferred to the stock pile for loading into specially designed ore carrying vessels for shipment to the United States. These vessels are loaded at the rate of 3000 tons per hour.

In February, 1947, the company acquired two properties on the Gulf of Paria, known as the Valley of Jamaica and the Valley of Carenero, to be used as site for a transfer station appropriately named Puerto de Hierro, or Iron Port. Construction here was start-

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- Glass tank—port neck

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B&W REFRACTORIES PRODUCTS—B&W 80 Firebrick • B&W Junior Firebrick • B&W 80 Glass Tank Blocks • B&W Insulating Firebrick B&W Refractory Castables, Plastics and Mortars • OTHER B&W PRODUCTS—Stationary & Marine Boilers and Component Equipment... Chemical Recovery Units . . . Seamless & Welded Tubes . . . Pulverizers . . . Fuel Burning Equipment . . . Pressure Vessels . . . Alloy Castings ed in May of the same year and completed in July, 1950.

The first major step in the building program was the establishment of a construction camp at Palua, with docking accommodations for vessels bringing in machinery and supplies, and adequate warehouse and storage facilities. A 50-ton stiff-leg derrick was erected on the river bank, for use in unloading cargo.

With completion of a 30-mile two-lane gravel road from Palua to El Pao, early in 1944, work on the mining camp could proceed. Construction of the single-track railroad to the mine was also started at the same time, and the last spike driven on June 1, 1950.

Railroad Description—Total length of the railroad is 38.7 miles, of which 34.8 miles is main-line track. It climbs about 1600 feet as it winds its way up to the mine. Of the total trackage, 21 miles is curved and super-elevated; maximum curve is 11 degrees U. S. standard, and maximum grade 2 per cent, compensated for curvature. There are six short-span steel-girder bridges, five arch culverts and twelve box culverts. Five sidings are provided for passing.

BUCYRUS ERIE

Loading ore with 4-cu yd shovel at El Pao mine

Over 1,500,000 cu yd of earth and rock had to be moved in construction of the railroad. Two quarries with a crushing plant were opened, one at each end, to supply granite ballast for the road bed. Imported creosoted pine ties were found to be the most economical and satisfactory for service in the tropics. The track is U. S. standard gage, with 100-pound rails.

The main-line haulage equipment consists of three 130-ton, 1500 hp diesel-electric locomotives with dynamic braking; a hundred 70-ton bottom-dump ore cars and miscellaneous flat cars, box cars, and tank cars.

Ore Is High Grade Hematite—The ore is a hard, massive hematite ranging from 63 to 66 per cent iron, as shipped. It is of a type that may be used either in blast furnaces, or open hearths. The main deposit now being mined is a bowl-shaped formation about 2600 feet long and 1700 feet wide, on top of a hill rising several hundred feet above the surrounding country. Center of the bowl-like formation is filled with an overburden consisting mainly of clay but with some igneous material; this ranges up to 425 feet in thickness and must be stripped before the ore body can be mined out. The ore body itself varies from a few feet to approximately 400 feet in thickness.

There are other exposed ore bodies within the concessions which will be mined later, but sufficient diamond drilling has not yet been completed to determine their size.

Mining method adopted is one of slicing off the hill top in 13-meter high benches by standard open-pit methods. Eventually, due to the ore body's shape, a pit will be excavated within the hill. Actual mining operations started in August 1950 and are now being carried out on the two upper benches where the ore is exposed at the surface, with no over-burden to remove. The program for stripping overburden will begin shortly and progress with the mining of the various levels. Present estimates indicate that 1 cu yd of overburden will have to be removed for every 4.2 tons of ore mined.

Drilling Procedure—Primary drilling in the ore is done with cat-mounted electric churn drills with 9-inch diameter bits. Upper portion of the ore body now being mined is badly fractured, a condition which, combined with the ore's extreme hardness, presents a very difficult drilling problem.

Ore and overburden are handled by four electric shovels with 4 cu yd dippers and Ward Leonard control. The ore is loaded into ten 30-ton, side-dump semitrailers hauled by 200 hp diesel-engine powered tractor trucks. The heavily loaded trucks travel about 1 mile down an 8 per cent grade to the crushing plant. A special hydraulic retarding unit supplements the regular brakes on the down hill haul. The trucks are dumped at the crusher by a fixed overhead crane which permits control of the rate of feed to the crusher.

Primary crushing is done in a 54 x 84-inch Blake-type jaw crusher powered by a 350 hp electric motor through v-belt drive. Set to crush to 6-inch, the crusher has a capacity of 900 tons of ore per hour.

Conveyor Belt Utilized—The jaw crusher discharges directly onto a 42-inch rubber belt conveyor, 179 feet long, running at 370 fpm and delivering the ore to a $2\frac{3}{8}$-inch grizzly at the secondary crushers. Oversize from the grizzly flows into two $5\frac{1}{2}$-foot gyratory crushers, each with a capacity of 440 tons per hour and set to crush to $2\frac{1}{2}$-inch, or by-passes the gyratories as open-hearth lump.

Gyratory discharge and undersize from the grizzly are combined on a 42-inch belt conveyor, 4286 feet long, running at 370 fpm and discharging onto a $2\frac{3}{8}$-inch grizzly on top of the ore-loading bin at the rail head. This bin, a large steel structure, has a capacity of 4000 tons and is divided into three compartments to permit separate handling of blast furnace ore and open-hearth lump ore.

Ore is drawn from the bottom of the bin through six air-cylinder operated gates into railroad cars on a double track under the bin. A 70-ton car can be loaded in about 1 minute.

Ships Liberian Iron Ores

Initial shipment of Liberian iron ore to Republic Steel Corp., amounting to 10,000 tons left Monrovia June 5 in the Liberty ship, *Simeon G. Reed*, bound for Baltimore. Native laborers loaded the ore by hand into buckets which were transferred by the ship's loading facilities into the hold of the vessel.

A conveyor belt loader capable of handling 3000 tons of ore an hour is nearing completion. Six additional ships are scheduled for loading in June at the Monrovia port which was completed a year ago by the United States Navy under a $22 million lend-lease agreement.

Liberian ore, both hematite and magnetic, has an average iron content of 68.9 per cent. Reliable estimates place the central ore deposit to contain 22 million tons.

Mining operations will be by open-pit methods for the next 15 years, according to present plans. While rainfall in the region is 220 inches per year, it is not expected to hamper operations.

The Liberian Mining Co. for the past three years has been building a narrow-gage railroad and a parallel motor road from Monrovia northwest to the ore deposit—a distance of 41 miles.

In 1949 Republic Steel Corp. acquired a major share of the stock of the Liberia Mining Co. and signed a long-term agreement for half of the company's output. It is expected that production will reach a million tons by 1952.

The Liberian Navigation Co., a subsidiary of Republic Steel Corp., reports that the first of two 22,000-ton ore boats will be christened at Glasgow, Scotland, in July. Each will be capable of making the 8000-mile round trip between Monrovia and Baltimore in 25 days.

Giant Motors for Grand Coulee

Two giant General Electric 65,000-hp synchronous motors, second to none in power and size, have been installed in the pumping plant at Grand Coulee Dam by G-E engineers in cooperation with the U. S. Bureau of Reclamation.

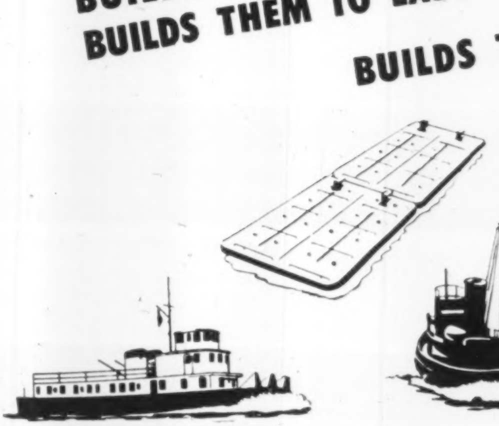
These huge motors, each weighing more than 330 tons, will be used in the bureau's Columbia basin irrigation project, under a program designed to help irrigate a vast expanse of rich but dry land in south-central Washington.

They will drive two of the world's largest pumps, each capable of supplying enough water to equal the daily requirements of New York city. When operating under optimum conditions, each pump will supply more than a billion gallons of water a day (50 tons a second) to help transform the locality into a highly productive farming area, according to bureau officials.

Oil Purification Information

Savings in oil consumption and equipment operating and maintenance costs in quenching, hydraulic and metal working operations are described in three specially-prepared, illustrated bulletins, offered by Honan-Crane Corp., Lebanon, Ind.

Actual quench oil purification problems and their solutions are discussed in one bulletin. Another tells how plants of all sizes have eliminated down-time, mechanical failures and expensive repairs on hydraulic equipment by use of their hydraulic oil purifiers. The third describes the company's new magnetic filter, designed for individual application on machine tools such as wet surface grinders, milling machines and gear shapers.



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Proper Lubrication

(Concluded from Page 112)

they should be applied. That is by heating them to a temperature that will make them sufficiently fluid to penetrate to the core. If facilities are available for heating the lubricant and the rope is arranged so that it can be passed through a bath of hot lubricant, effective relubrication can be secured. Lubricants, such as used on rope when it is manufactured, and diluted with a suitable volatile solvent can be applied in the field, without heating, either by dripping continually as the rope passes over a sheave or by brushing. These types are also effective because they give good coverage, penetrate to the core and leave a good strong uniform film after the solvent has evaporated.

Various Lubricants Used — Some users of wire rope, such as in the heavy construction field, apply an extreme pressure-type grease by means of a paddle or brush to the outer surfaces of a wire rope. These materials and this method of application offer no more than a slight degree of protection to the rope's outer surfaces. For ropes whose service life is no more than a few weeks, or at best a few months, such practice is better than nothing. Still other users apply a light engine oil to their ropes. This material will usually penetrate to the core and offers some protection but has practically no value as a lubricant or corrosion protective agent to the balance of the rope.

There are many other causes of premature wire rope failure in addition to improper or insufficient lubrication, such as poor sheave design, improper sheave arrangement, faulty sheave maintenance, kinking of the wire rope, improper running-in practices, overloading, careless handling and storage, etc. All these factors together with lubrication are important. If each is given proper attention and wire rope is applied, maintained, and regarded as a precision machine, it will give performance for which it is designed.

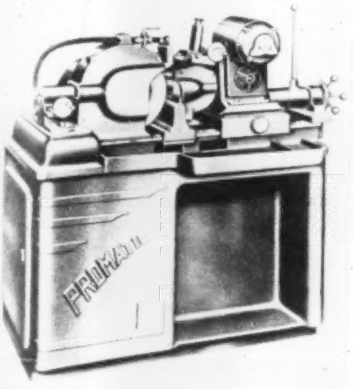
Vapor Degreasing Handbook

A new 21-page handbook on vapor degreasing metal parts is offered by Phillips Mfg. Co., 3475 W. Touhy Ave., Chicago, Ill. It answers most questions generally asked about vapor degreasing, completely covering the subject of what it is and to what types of materials and manufacturing it can be applied. Numerous photographs of various types of units along with useful data charts are also included in the booklet.

New Products and Equipment

Compact Centerless Grinder

Promatic No. 1 centerless grinding machine build by Diversified Metal Products Co., 5125 Alcoa Ave., Los Angeles, Calif., is a machine that is compact, requires small floor space and turns out a superior finish. Standard equipment includes: Built-in coolant reservoir with removable settling basin, coolant pump with ¼-hp motor and all necessary fittings, strainer screens, outlet valves and connections, wheel guards, combination straight and contour wheel dressing device, ¼-hp vari-drive regulating wheel motor and controls, three-groove main motor sheave bored for 1-inch shaft with ¼ x ⅛-inch key-way and all necessary V belts.



Capacity of the grinder is 1¼-inch maximum stock diameter. Grinding wheel is 14 inches in diameter with 4-inch face. Regulating wheel is 7 inches in diameter with 4-inch face. Main spindle speed is 1600 rpm. Grinding wheel motor is 2 hp, 1800 rpm, 220/440 v, 60-cycle.

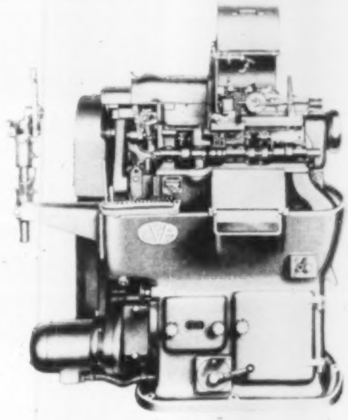
Recording Meter Line

Series 500 recording voltmeters and ammeters are being produced by Bristol Co., Waterbury 20, Conn. They make a continuous record of voltage or current on an 8-inch circular chart and feature a new measuring mechanism and other basic improvements. Moving-iron measuring mechanism produces a high actuating torque at a low electrical burden. It has shock-protected precision stainless steel bearings, magnetic damping and a locking device to prevent damage due to rough handling.

Instruments are housed in a compact die cast aluminum alloy case which is moisture, fume and dust proof. They can be furnished in a variety of models for wall, surface panel or flush panel mounting.

Single Spindle Automatic

A single spindle automatic screw machine made in England by E. H. Jones is available through British Industries Corp., International Machinery Division, 164 Duane St., New York 13, N. Y. It takes standard American collets and attachments and is equipped with American motors and controls. All threads are American thread sizes.



All parts are easily accessible to the operator facilitating rapid changeover. Ample rigidity at high speeds and under heavy loads is built into the machine. Spindle is made from nitralloy for durability and freedom from distortion. Turret slide and cross slides are mounted in dovetail slideways. Two sets of change gears provide 36 spindle speeds. A safety clutch interposed in the driving mechanism between the crankshaft, tool slide camshafts disengages should undue loads be imposed due to interference caused by tool breakage or other causes.

No Ductwork Required

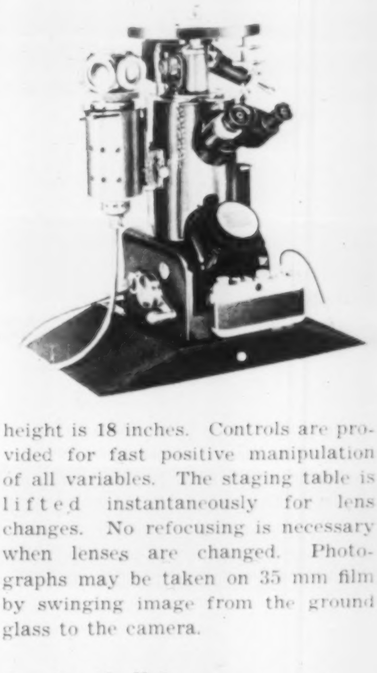
Split-type crane cab cooler developed by Dravo Corp., Fifth and Liberty Aves., Pittsburgh 25, Pa., requires no ductwork for installation because the cooling section is installed in the cab itself and the larger condenser section is placed outside on the crane in any convenient location. The unit filters air to remove dust, dirt and fumes, plus cooling the air in the summer and heating air in winter if necessary. Only connections between the cooling unit and the condenser unit outside the cab are power lines and refrigerant piping.

Thermostatically controlled, the cooler will maintain a temperature of 80° to 85° F when the outside ambient temperature is 175° F. Temperature in a cab is kept at 68° to 75° during the heating cycle with an ambient temperature of zero outside.

Quick Metal Analysis

Examination, study and photographic reproduction of metal samples is possible with OPL metallograph made by F. T. Griswold Mfg. Co., Wayne, Pa. A large assortment of objective, ocular and projective lenses are provided. These are parfocal and parcentered and are coated on all air-glass surfaces and corrected for infinity.

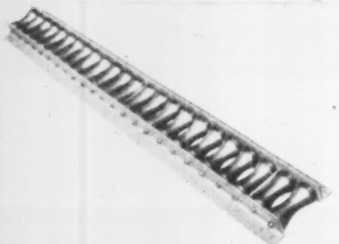
The compact unit occupies a table space of 12 inches square and overall height is 18 inches. Controls are provided for fast positive manipulation of all variables. The staging table is lifted instantaneously for lens changes. No refocusing is necessary when lenses are changed. Photographs may be taken on 35 mm film by swinging image from the ground glass to the camera.



Gravity Shell Conveyor

Gravity conveyors with specially shaped rollers for handling 75 to 155 mm shells are announced by the Samuel Olson Mfg. Co., 2423-25 Bloomingdale Ave., Chicago 47, Ill. Designed to store and move shells from machine to machine between operations they can be furnished to required lengths.

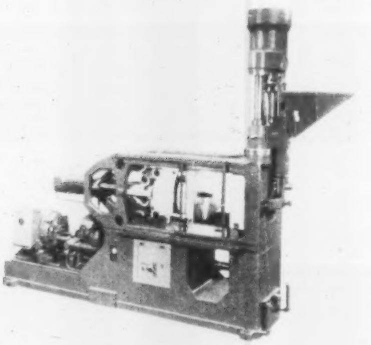
Rollers are of one piece steel swaged from 10 gage electric welded tubing. Roller shafts are mounted on ball bearings. A 7/16-inch hexagonal shaft is used to prevent bearings turning on the shaft and to prevent shaft turning in the roller. Rollers are 2⅝ inches diameter by 5⅛ inches long. For handling finished shells the rollers can be furnished with rubber coverings.



Fast Injection Molding

Combining the high speed of a small machine with the rigid locking of a large one the L-2-8 ounce injection molding machine by Lester-Phoenix Inc., Cleveland, O., is designed to give molders the high speed of double toggle linkage and efficient injection cylinder design. It will mold 8 ounces of polystyrene material or 10 ounces of acetate with an effective plunger displacement of 32 cubic inches. With its four pyrometers set at 600° F the machine will deliver hourly 80 pounds of polystyrene heated to 400° F.

Locking tonnage is 350 tons, die plates are 22⅛ by 28 inches and the solid frame and central die adjustment used in the previous model are all retained. Stationary die platen is made in such a way that a locating ring of any dimension between 2 and 4 inches can be used. Die space has been made completely accessible for clamping molds. Injection pressure is unchanged from the earlier model at 20,000 psi but the internally heated cylinder is greatly strengthened.



Direct Current Capacitors

A new line of 100 v, dc capacitors with double the capacitance designed into the same capacitor space is announced by General Electric Transformer & Allied Product Divisions, Pittsfield, Mass. They meet all requirements of F characteristics of JAN-C-25 for 100 v dc units.

Thermometer in Steel Case

TAG model 8689 thermometer, made by Tagliabue Instruments Division, Weston Electrical Instrument Corp., Newark 5, N. J., has a corrosion resistant stainless steel case. Scale of thermometer is easy to read and can be obtained in five different types ranging from minus 40° F to 400° F.

Hydraulic Diamond Turner

Citco hydraulic diamond turner, orignally designed for Cincinnati centerless grinders, is now available for Landis Camamatic, I. W. and Heald internal grinders. Made by Cleveland Industrial Tool Co. Inc., Cleveland 17, O., it features adjustability to three ranges of degrees, automatic control which splits segments at

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R 5-51

THIS "Buffalo" BENDING ROLL *Gives High Speed Accuracy*—

— at DRAVO Corp.

Above is a big reason why Dravo Corp., Pittsburgh, Pa., gets both accuracy and high production on its heavy metal bending—a big "Buffalo" No. 3 Horizontal Bending Roll. Easy to operate, easy on roll changes for handling angles, flats, tubes, pipe, tees, channels. Ruggedly built—easy on maintenance. In both horizontal and vertical models, as well as the OA Aircraft Bending Roll at right (in use by a prominent Aircraft Company). WRITE FOR DETAILS—we can furnish the size and type you need for lowest cost metal bending!

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Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

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completion of each turning cycle and maintenance of a new cutting edge throughout life of the diamond.

Leveling Jack

Style JS Empco leveling jack, offered by Enterprise Machine Parts Corp., Detroit 12, Mich., will support 20 tons and lift 8000 pounds without overexertion on the wrench. It vertically raises or lowers by turning the adjusting nut to right or left. All jacks have 3/8-inch leveling adjustment and come in three heights.

Bonds Rubber to Metal

Ardux 120, developed by Aero Research Limited, Ciba Co. Inc., New York 14, N. Y., makes it possible to brush coat the metal and rubber surfaces to be bonded with the mixture, apply a pressure of about 10-20 psi for 15 to 20 minutes at 110 to 120° C or for 5 minutes at 140 to 150° C, and achieve a firm durable bond. Rubber may also be bonded to plastic with this material.

Insulated Closed-End Connector

Bomb-Tail insulated closed-end connectors that can be used on both solid or stranded wires and which require only two sizes to cover entire wire range from No. 22 to No. 10, are available from Aircraft-Marine Products Inc., Harrisburg, Pa.

Precision Testing Unit

Ottawa Engineering & Sales Co., Marne, Mich., announces the Grade-O-Meter, a precision testing instrument for grading grinding wheels. It numerically indicates the exact grade of grinding wheel needed for each job and establishes definite limits of grinding wheel grade tolerance for each grinding operation.

Strain Gage

Strains up to 10 per cent in materials or parts can be measured accurately with the new SR-4 post-yield strain gage introduced by Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa. Known as type PA-3, it has a flat-grid paper base construction and requires a special air drying cement which is supplied with it.

FOR MORE INFORMATION

on the new products and equipment in this section write to Readers' Service Dept., STEEL, Penton Bldg., Cleveland 13, O. Your request will receive prompt attention.

The Market Outlook

GOVERNMENT allocation of every pound of steel produced beginning no later than fourth quarter is a distinct possibility. With increasingly severe shortages of the major products threatening over remaining months of the year, pressure is rising for closing the "open end" of the Controlled Materials Plan. Anticipating a hectic scramble among unrated consumers for the "free" tonnage left after military and defense-support needs are cared for, government control authorities are reported moving to enlarge the scope of CMP.

OPEN UMBRELLA—Plans are still in the formative stage, but preliminary steps are being taken to bring all classes of steel consumption under the CMP umbrella by Oct. 1. Most lines of civilian goods manufacture already are covered since they fall in the lists designated in CMP regulations as essential. However, a large consuming area, chiefly consumer durable goods fields, lacks supply protection. It is these latter consumers who are now coming under the scrutiny of the control authorities. Data are being sought from them on which to base distribution policy, and indications are definite decision will be forthcoming in a few weeks.

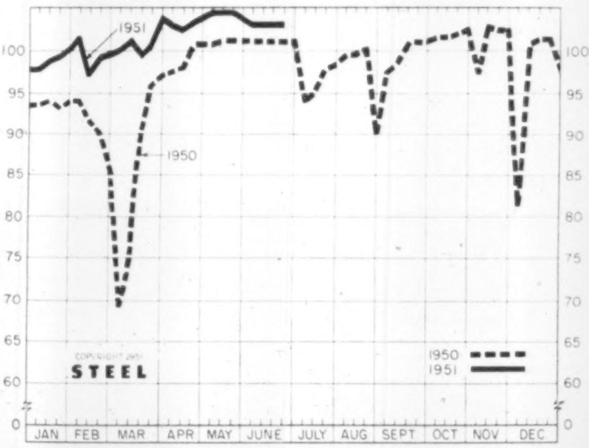
CONTROLS— Meanwhile, CMP distribution to military and defense-support industries goes into effect on schedule July 1. Third quarter, however, is expected to be largely a "testing" or "warmup" period for the plan. Many administrative details remain to be worked out. Expectations are it will be well on toward the closing months of the year before anything approaching desired balance between supply and demand are achieved. National Production Authority last week postponed from July 1 to July 7 the date on which iron and steel orders for September delivery under CMP will receive top priority. Purpose of the move is to permit consumers who already have placed DO-rated orders with the mills time to convert such to authorized CMP status. Consumers are being urged to convert quickly as such will simplify and expedite order handling by the mills.

SUPPLY—Cutbacks in consumer durable goods, due to contraction attending the working off of large stocks of finished items, as well as reductions resulting from smaller metal allotments, will not materially ease tight steel supply conditions. Whatever slack is experienced on this score will be more than offset by burgeoning defense requirements in third and fourth quarters. Consequently, the outlook for the short term is bleak. For the longer term, however, trade views are increasingly optimistic. Some authorities predict definite supply easing in first half of next year, basing their predictions on the fact substantial tonnage now being directed into defense plant expansions will be available for general consumption with constructions completed, and also, the fact some new steelmaking facilities now being installed should be coming into production over coming months.

PRODUCTION—Since the closing week of March steelmaking operations have held at 103 per cent of capacity or higher with the exception of the week ended Apr. 14 when the rate eased to 102.5 per cent.

PRICES—Stability at ceiling price levels characterizes all branches of the iron and steel and related markets. STEEL's weighted index of finished steel prices holds at 171.92 as does the arithmetical composite at $106.32. An important development pricewise the past week concerned announcement by the Federal Trade Commission it had reached a tentative agreement with steelmakers with respect to its pricing action launched four years ago against the American Iron & Steel Institute and 90 producers. At that time the steelmakers were charged with collusive pricing action. The settlement permits the steel producers to quote to consumers any prices they wish, provided they act independently and not in agreement or collusion with each other, and refrain from illegal discrimination.

NATIONAL STEELWORKS OPERATIONS



DISTRICT INGOT RATES

Percentage of Capacity Engaged at Leading Production Points

	Week Ended June 23	Change	Same Week 1950	Same Week 1949
Pittsburgh	102	+ 1.5*	101	81
Chicago	106	+ 1.5*	105	95.5
Mid-Atlantic	102	+ 1*	98	80.5
Youngstown	105	0	106	88
Wheeling	98.5	0	102.5	66
Cleveland	102	+ 1.5	100	85
Buffalo	104	0	104	85
Birmingham	100	0	100	100
New England	85	0	92	58
Cincinnati	100	− 4	106	91
St. Louis	92	− 3	89	82
Detroit	104	− 4	111	103
Western	102	− 3.5	96	82
Estimated national rate	103	0	101	84.5

Based on weekly steelmaking capacity of 1,999,034 tons for 1951; 1,928,721 tons for second half, 1950; 1,906,268 tons for first half, 1950; 1,843,516 tons for 1949.

* Change from revised rate for preceding week.

Composite Market Averages

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
FINISHED STEEL INDEX, Weighted:					
Index (1935-39 av.=100)	171.92	171.92	171.92	156.58	111.86
Index in cents per lb.	4.657	4.657	4.657	4.242	3.030
ARITHMETICAL PRICE COMPOSITES:					
Finished Steel, NT	$106.32	$106.32	$106.32	$91.36	$61.45
No. 2 Fdry. Pig Iron, GT	52.54	52.54	52.54	46.47	26.17
Basic Pig Iron, GT	52.16	52.16	52.16	45.97	25.50
Malleable Pig Iron, GT	53.27	53.27	53.27	47.27	26.79
Steelmaking Scrap, GT	44.00	44.00	44.00	39.25	19.17

Weighted finished steel index based on average shipments and Pittsburgh district prices of the following 14 representative products during 5-year base period 1935-39: Structural shapes, plates, rails, hot-rolled and cold-finished bars, pipe, wire, nails, tin plate, hot and cold-rolled sheets, galvanized sheets, hot and cold-rolled strip. For complete explanation see STEEL, Sept. 19, 1949, p. 54.

Arithmetical steel price composite based on same products as the weighted finished steel index with the exception of rails, cold-finished bars, galvanized sheets and hot-rolled strip.

Basic and No. 2 foundry pig iron composites are based on average prices at Pittsburgh, Bethlehem, Birmingham, Buffalo, Chicago, Cleveland, Granite City, Youngstown. Malleable composite based on same points, except Birmingham.

Steelmaking scrap composite based on average prices of No. 1 heavy melting steel at Pittsburgh, Chicago and Philadelphia.

Comparison of Prices

Comparative prices by districts, in cents per pound except as otherwise noted. Delivered prices based on nearest production point.

FINISHED MATERIALS

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Bars, H.R., Pittsburgh	3.70	3.70	3.70	3.45	2.50
Bars, H.R., Chicago	3.70	3.70	3.70	3.45	2.50
Bars, H.R., del. Philadelphia	4.20	4.20	4.20	3.93	2.82
Bars, C.F., Pittsburgh	4.55	4.55	4.55	4.10-15	3.10
Shapes, Std., Pittsburgh	3.65	3.65	3.65	3.40	2.35
Shapes, Std., Chicago	3.65	3.65	3.65	3.40	2.35
Shapes, del. Philadelphia	3.91	3.91	3.91	3.46	2.465
Plates, Pittsburgh	3.70	3.70	3.70	3.50	2.50
Plates, Chicago	3.70	3.70	3.70	3.50	2.50
Plates, Coatesville, Pa.	4.15	4.15	4.15	3.60	2.50
Plates, Sparrows Point, Md.	3.70	3.70	3.70	3.50	2.50
Plates, Claymont, Del.	4.15	4.15	4.15	3.60	2.50
Sheets, H.R., Pittsburgh	3.60-75	3.60-75	3.60-75	3.35	2.425
Sheets, H.R., Chicago	3.60	3.60	3.60	3.35	2.425
Sheets, CR., Pittsburgh	4.35	4.35	4.35	4.10	3.275
Sheets, C.R., Chicago	4.35	4.35	4.35	4.10	3.275
Sheets, C.R., Detroit	4.55	4.55	4.55	4.30	3.375
Sheets, Galv, Pittsburgh	4.80	4.80	4.80	4.40	4.05
Strip, H.R., Pittsburgh	3.75-4.00	3.75-4.00	3.75-4.00	3.25	2.35
Strip, H.R., Chicago	3.50	3.50	3.50	3.25	2.35
Strip, C.R., Pittsburgh	4.65-5.35	4.65-5.35	4.65-5.35	4.15	3.05
Strip, C.R., Chicago	4.90	4.90	4.90	4.30	3.15
Strip, C.R., Detroit	4.35-5.60	4.35-5.60	4.35-5.60	4.35-40	3.15
Wire, Basic, Pittsburgh	4.85-5.10	4.85-5.10	4.85-5.10	4.50	3.05
Nails, Wire, Pittsburgh	5.90-6.20	5.90-6.20	5.90-6.20	5.30	3.25
Tin plate, box, Pittsburgh	$8.70	$8.70	$8.70	$7.50	$5.25

SEMIFINISHED

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Billets, forging, Pitts. (NT)	$66.00	$66.00	$66.00	$63.00	$47.00
Wire rods, $\frac{7}{32}$-$\frac{3}{8}$", Pitts.	4.10-30	4.10-30	4.10-30	3.85	2.30

PIG IRON, Gross Ton

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Bessemer, Pitts.	$53.00	$53.00	$53.00	$47.00	$27.00
Basic Valley	52.00	52.00	52.00	46.00	26.00
Basic, del. Phila.	56.49	56.49	56.49	49.44	27.84
No. 2 Fdry, Pitts.	52.50	52.50	52.50	46.50	26.50
No. 2 Fdry, Chicago	52.50	52.50	52.50	46.50	26.50
No. 2 Fdry, Valley	52.50	52.50	52.50	46.50	26.50
No. 2 Fdry, Del. Phila.	56.99	56.99	56.99	49.94	28.34
No. 2 Fdry, Birm.	48.88	48.88	48.88	42.88	22.88
No. 2 Fdry (Birm.) del. Cin.	55.33	55.33	55.33	49.08	26.94
Malleable Valley	52.50	52.50	52.50	46.50	26.50
Malleable, Chicago	52.50	52.50	52.50	46.50	26.50
Charcoal, Lyles, Tenn.	66.00	66.00	66.00	60.00	33.00
Ferromanganese, Etna, Pa.	188.00	188.00	188.00	175.00	140.00*

* Delivered, Pittsburgh.

SCRAP, Gross Ton (including broker's commission)

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
No. 1 Heavy Melt. Pitts.	$45.00	$45.00	$45.00	$45.00	$20.00
No. 1 Heavy Melt. E. Pa.	43.50	43.50	43.50	35.25	18.75
No. 1 Heavy Melt. Chicago	43.50	43.50	43.50	37.50	18.75
No. 1 Heavy Melt. Valley	45.00	45.00	45.00	42.50	20.00
No. 1 Heavy Melt. Cleve.	44.00	44.00	44.00	40.50	19.50
No. 1 Heavy Melt. Buffalo	44.00	44.00	44.00	39.75	19.25
Rails, Rerolling, Chicago	52.50	52.50	52.50	47.50	22.25
No. 1 Cast, Chicago	49.00*	49.00*	49.00*	44.50	20.00

* F. o.b. shipping point.

COKE, Net Ton

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Beehive, Furn. Connlsvl.	$14.75	$14.75	$14.75	$14.25	$7.50
Beehive, Fdry., Connlsvl.	17.50	17.50	17.50	15.50	8.25
Oven Fdry., Chicago	21.00	21.00	21.00	21.00	13.00

NONFERROUS METALS

	June 21 1951	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Copper, del. Conn.	24.50	24.50	24.50	22.50	14.375
Zinc, E. St. Louis	17.50	17.50	17.50	15.00	8.25
Lead, St. Louis	16.80	16.80	16.80	11.80	8.10
Tin, New York	106.00	118.00	139.00	76.625	52.00
Aluminum, del.	19.00	19.00	19.00	17.50	15.00
Antimony, Laredo, Tex.	42.00	42.00	42.00	24.50	14.50
Nickel, refinery, duty paid	56.50	56.50	50.50	48.00	35.00

Pig Iron

F.o.b. furnace prices quoted under GCPR as reported to STEEL. Minimum delivered prices do not include 3% federal tax. Key to producing companies published on second following page.

PIG IRON, Gross Ton

	Basic	No. 2 Foundry	Malleable	Bessemer
Bethlehem, Pa. B2	$54.00	$54.50	$55.00	$55.50
Brooklyn, N.Y., del.	....	58.69	59.46	....
Newark, del.	56.74	57.24	57.74	58.24
Philadelphia, del.	56.49	56.99	57.49	57.99
Birmingham District				
AlabamaCity, Ala. R2	48.38	48.88	....	....
Birmingham R2	48.38	48.88	....	....
Birmingham S9	48.38	48.88	....	....
Woodward, Ala. W15	48.38	48.88	....	....
Cincinnati, del.	....	55.33	....	....
Buffalo District				
Buffalo R2	52.00	52.50	53.00	....
Buffalo H1	52.00	52.50	53.00	....
Tonawanda, N.Y. W12	52.00	52.50	53.00	....
No. Tonawanda, N.Y. T9	....	52.50	53.00	....
Boston, del.	61.63	62.13	62.63	....
Rochester, N.Y., del.	54.74	55.24	55.74	....
Syracuse, N.Y., del.	55.72	56.22	56.72	....
Chicago District				
Chicago I-3	52.00	52.50	52.50	53.00
Gary, Ind. U5	52.00	....	52.50	....
IndianaHarbor, Ind. I-2	52.00	....	52.50	....
So. Chicago, Ill. W14	52.00	52.50	52.50	....
So. Chicago, Ill. Y1	52.00	52.50	52.50	....
So. Chicago, Ill. U5	52.00	....	52.50	53.00
Milwaukee, del.	53.97	54.47	54.47	54.97
Muskegon, Mich., del.	....	58.20	58.20	....
Cleveland District				
Cleveland A7	52.00	52.50	52.50	53.00
Cleveland R2	52.00	52.50	52.50	....
Akron, del. from Cleve.	54.49	54.99	54.99	55.49
Lorain, O. N3	52.00	....	....	53.00
Duluth I-3	....	....	52.50	....
Erie, Pa. I-3	52.00	52.50	52.50	53.00
Everett, Mass. E1	....	51.75	52.25	....
Fontana, Calif. K1	58.00	58.50	....	....
Geneva, Utah G1	52.00	52.50	....	....
Seattle, Tacoma, Wash., del.	....	60.35	....	....
Portland, Oreg., del.	....	60.35	....	....
LosAngeles, SanFrancisco, del.	59.85	60.35	....	....
GraniteCity, Ill. G4	53.90	54.40	54.90	....
St. Louis, del. (inc. tax)	54.66	55.16	55.66	....
Ironton, Utah C11	52.00	52.50	....	....
LoneStar, Tex. L6	48.00	*48.50	48.50	....
Minnequa, Colo. C10	54.00	55.00	55.00	....
Pittsburgh District				
NevilleIsland, Pa. P6	....	52.50	52.50	53.00
Pitts., N.&S. sides, Ambridge, Aliquippa, del.	....	53.74	53.74	54.24
McKeesRocks, del.	....	53.49	53.49	53.99
Lawrenceville, Homestead, McKeesport, Monaca, del.	....	54.00	54.00	54.50
Verona, del.	....	54.48	54.48	54.98
Brackenridge, del.	....	54.72	54.72	55.22
Bessemer, Pa. U5	52.00	....	52.50	53.00
Clairton, Rankin, So. Duquesne, Pa. U5	52.00	....	....	....
McKeesport, Pa. N3	52.00	....	....	53.00
Monnessen, Pa. P7	54.00	....	....	....
Sharpsville, Pa. S6	....	....	52.50	53.00
Steelton, Pa. B2	54.00	54.50	55.00	55.50
Swedeland, Pa. A3	56.00	56.50	57.00	57.50
Toledo, O. I-3	52.00	52.50	52.50	53.00
Cincinnati, del.	57.21	57.71	....	....
Troy, N.Y. R2	54.00	54.50	55.00	55.50
Youngstown District				
Hubbard, O. Y1	52.00	52.50	52.50	....
Youngstown Y1	52.00	52.50	52.50	....
Youngstown U5	52.00	....	....	53.00
Mansfield, O., del.	56.43	56.93	56.93	57.43

*Low phos, southern grade.

PIG IRON DIFFERENTIALS

Silicon: Add 50 cents per ton for each 0.25% Si over base grade, 1.75-2.25%, except on low phos iron on which base is 1.75-2.00%.

Phosphorus: Deduct 38 cents per ton for P content of 0.70% and over.

Manganese: Add 50 cents per ton for each 0.50% manganese over 1%, or portion thereof.

Nickel: Under 0.50% no extra; 0.50-0.74%, incl., add $2 per ton and each additional 0.25%, add $1 per ton.

BLAST FURNACE SILVERY IRON, Gross Ton

(Base 6.00-6.50% silicon; add $1.50 for each 0.5% Si)

Jackson, O. G2, J1	$62.50
Buffalo H1	63.75

ELECTRIC FURNACE SILVERY PIG IRON, Gross Ton

(Base 14.01-14.50% silicon; add $1 for each 0.5% Si to 18%; $1 for each 0.5% Mn over 1%; $1 for each 0.045% max. P)

NiagaraFalls, N.Y. P15	$83.00
Keokuk, Iowa, Openhearth & Fdry, frt. allowed K2	92.50
Keokuk, OH & Fdry., 12½ lb piglets, 16% Si, frt. allowed K2	95.50
Wenatchee, Wash., O.H. & Fdry., frt. allowed K2	92.50

CHARCOAL PIG IRON, Gross Ton

(Low phos. semi-cold blast; differential charged for silicon over base grade; also for hard chilling iron Nos. 5 x 6)

Lyles, Tenn. T3	$66.00

LOW PHOSPHORUS PIG IRON, Gross Ton

Cleveland, intermediate, A7	$57.00
Steelton, Pa. B2	60.00
Philadelphia delivered	63.12
Troy, N.Y. R2	60.00

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Semifinished and Finished Steel Products

[illegible] prices quoted under GCPR as reported to STEEL, June 21, 1951; cents per pound except as otherwise noted. Changes shown in italics. Code numbers following mill points indicate producing company; key on next two pages.

INGOTS, Carbon, Forging (NT)

Fontana,Calif. K1	$79.00
Munhall,Pa. U5	52.00

INGOTS, Alloy (NT)

Detroit R7	$54.00
Fontana,Calif. K1	80.00
Houston,Tex. S5	62.00
Midland,Pa. C18	54.00
Munhall,Pa. U5	54.00

BILLETS, BLOOMS & SLABS

Carbon, Rerolling (NT)

Bessemer,Pa. U5	$56.00
Clairton,Pa. U5	56.00
Ensley,Ala. T2	56.00
Fairfield,Ala. T2	56.00
Fontana,Calif. K1	75.00
Gary,Ind. U5	56.00
Johnstown,Pa. B2	56.00
Lackawanna,N.Y. B2	56.00
Munhall,Pa. U5	56.00
So.Chicago,Ill. U5	56.00
So.Duquesne,Pa. U5	56.00

Carbon, Forging (NT)

Bessemer,Pa. U5	$66.00
Buffalo R2	66.00
Canton,O. R2	66.00
Clairton,Pa. U5	66.00
Cleveland R2	66.00
Conshohocken,Pa. A3	73.00
Detroit R7	69.00
Ensley,Ala. T2	66.00
Fairfield,Ala. T2	66.00
Fontana,Calif. K1	85.00
Gary,Ind. U5	66.00
Geneva,Utah G1	66.00
Houston,Tex. S5	74.00
Johnstown,Pa. B2	66.00
Lackawanna,N.Y. B2	66.00
LosAngeles B3	85.00
Munhall,Pa. U5	66.00
Seattle B3	85.00
So.Chicago R2,U5,W14	66.00
So.Duquesne,Pa. U5	66.00
So.SanFrancisco B3	85.00

Alloy, Forging (NT)

Bethlehem,Pa. B2	$70.00
Buffalo R2	70.00
Canton,O. R2	70.00
Canton,O. (29) T7	66.00
Conshohocken,Pa. A3	77.00
Detroit R7	73.00
Fontana,Calif. K1	89.00
Gary,Ind. U5	70.00
Houston,Tex. S5	78.00
Ind.Harbor,Ind. Y1	70.00
Johnstown,Pa. B2	70.00
Lackawanna,N.Y. B2	70.00
LosAngeles B3	90.00
Massillon,O. R2	70.00
Midland,Pa. C18	70.00
Munhall,Pa. U5	70.00
So.Chicago R2,U5,W14	70.00
So.Duquesne,Pa. U5	70.00
Struthers,O. Y1	70.00
Warren,O. C17	70.00

ROUNDS, SEAMLESS TUBE (NT)

Canton,O. R2	$82.00
Cleveland R2	82.00
Fontana,Calif. K1	103.00
Gary,Ind. U5	82.00
Massillon,O. R2	82.00
So.Chicago,Ill. R2	82.00
So.Duquesne,Pa. U5	82.00

SHEET BARS (NT)

Fontana,Calif. K1	$89.00

SKELP

Aliquippa,Pa. J5	3.45
Munhall,Pa. U5	3.35
Warren,O. R2	3.35
Youngstown R2, U5	3.35

WIRE RODS

AlabamaCity,Ala. R2	4.10
Buffalo W12	4.10
Cleveland A7	4.10
Donora,Pa. A7	4.10
Fairfield,Ala. T2	4.10
Fontana,Calif. K1	4.90
Houston,Tex. S5	4.50
Johnstown,Pa. B2	4.10
Joliet,Ill. A7	4.10
LosAngeles B3	4.90
Minnequa,Colo. C10	4.35
Monessen,Pa. P7	4.30
No.Tonawanda,N.Y.B11	4.10
Pittsburg,Calif. C11	4.75
Portsmouth,O. P12	4.30
Roebling,N.J. R5	4.20
So.Chicago,Ill. R2	4.10
SparrowsPoint,Md. B2	4.20
Sterling,Ill.(1) N15	4.10
Struthers,O. Y1	4.10
Torrance,Calif. C11	4.90
Worcester A7	4.40

SHEET STEEL PILING

Ind.Harbor,Ind. I-2	4.45
Lackawanna,N.Y. B2	4.45
Munhall,Pa. U5	4.45
So.Chicago,Ill. U5	4.45

STRUCTURALS

Carbon Steel Stand. Shapes

AlabamaCity,Ala. R2	3.60
Aliquippa,Pa. J5	3.65
Bessemer,Ala. T2	3.65
Bethlehem,Pa. B2	3.70
Clairton,Pa. U5	3.65
Fairfield,Ala. T2	3.65
Fontana,Calif. K1	4.25
Gary,Ind. U5	3.65
Geneva,Utah G1	3.65
Houston,Tex. S5	4.05
Ind.Harbor,Ind. I-2	3.65
Johnstown,Pa. B2	3.70
KansasCity,Mo. S5	4.25
Lackawanna,N.Y. B2	3.70
LosAngeles B3	4.25
Minnequa,Colo. C10	4.10
Munhall,Pa. U5	3.65
Niles,Calif.(22) P1	4.85
Phoenixville,Pa. P4	4.95
Portland,Oreg. O4	4.50
Seattle B3	4.30
So.Chicago,Ill. U5, W14	3.65
So.SanFrancisco B3	4.20
Torrance,Calif. C11	4.25
Weirton,W.Va. W6	3.90

Alloy Stand. Shapes

Clairton,Pa. U5	4.35
Fontana,Calif. K1	5.55
Munhall,Pa. U5	4.35
So.Chicago,Ill. U5	4.35

H.S., L.A. Stand. Shapes

Aliquippa,Pa. J5	5.50
Bessemer,Ala. T2	5.50
Bethlehem,Pa.(14) B2	5.50
Clairton,Pa. U5	5.50
Fairfield,Ala. T2	5.50
Fontana,Calif. K1	6.10
Gary,Ind. U5	5.50
Geneva,Utah G1	5.50
Ind.Harbor,Ind. I-2	5.50
Ind.Harbor,Ind. Y1	6.00
Johnstown,Pa. B2	5.50
Lackawanna,N.Y.(14)B2	5.50
LosAngeles B3	6.05
Munhall,Pa. U5	5.50
Seattle B3	6.10
So.Chicago,Ill. U5	5.50
So.SanFrancisco B3	6.00
Struthers,O. Y1	6.00

Wide Flange

Bethlehem,Pa. B2	3.70
Clairton,Pa. U5	3.65
Fontana,Calif. K1	4.65
Lackawanna,N.Y. B2	3.70
Munhall,Pa. U5	3.65
So.Chicago,Ill. U5	3.65

H.S., L.A. Wide Flange

Bethlehem,Pa. B2	5.50
Lackawanna,N.Y. B2	5.50
Munhall,Pa. U5	5.45
So. Chicago,Ill. U5	5.45

BEARING PILES

Munhall,Pa. U5	3.65
So.Chicago,Ill. U5	3.65

PLATES, High-Strength Low-Alloy

Aliquippa,Pa. J5	5.65
Bessemer,Ala. T2	5.65
Clairton,Pa. U5	5.65
Cleveland J5, R2	5.65
Conshohocken,Pa. A3	5.90
Fairfield,Ala. T2	5.65
Fontana,Calif.(30) K1	6.25
Gary,Ind. U5	5.65
Geneva,Utah G1	5.65
Ind.Harbor,Ind. I-2	5.65
Ind.Harbor,Ind. Y1	6.15
Johnstown,Pa. B2	5.65
Munhall,Pa. U5	5.65
Pittsburgh J5	5.65
Seattle B3	6.55
Sharon,Pa. S3	5.70
So.Chicago,Ill. U5	5.65
SparrowsPoint,Md. B2	5.65
Warren,O. R2	5.65
Youngstown Y1	6.15

PLATES, Open-Hearth Alloy

Claymont, Del. C22	4.85
Coatesville,Pa. L7	5.25
Conshohocken,Pa. A3	5.05
Fontana,Calif. K1	5.70
Gary, Ind. U5	4.75
Johnstown,Pa. B2	4.75
Munhall,Pa. U5	4.75
Sharon,Pa. S3	5.20
So.Chicago,Ill. U5	4.75
SparrowsPoint,Md. B2	4.75

FLOOR PLATES

Cleveland J5	4.75
Conshohocken,Pa. A3	4.75
Harrisburg,Pa. C5	5.95
Ind.Harbor,Ind. I-2	4.75
Munhall,Pa. U5	4.75
So.Chicago,Ill. U5	4.75

PLATES, Ingot Iron

Ashland,c.l.(15) A10	3.95
Ashland,lcl(15) A10	4.45
Cleveland,c.l. R2	4.30
Warren,O.c.l. R2	4.30

PLATES, Carbon Steel

AlabamaCity,Ala. R2	3.70
Aliquippa,Pa. J5	3.70
Ashland,Ky.(15) A10	3.70
Bessemer,Ala. T2	3.70
Clairton,Pa. U5	3.70
Claymont,Del. C22	4.15
Cleveland J5, R2	3.70
Coatesville,Pa. L7	4.15
Conshohocken,Pa. A3	4.15
Fairfield,Ala. T2	3.70
Fontana,Calif.(30) K1	4.30
Gary,Ind. U5	3.70
GraniteCity,Ill. G4	4.40
Geneva,Utah G1	3.70
Harrisburg,Pa. C5	4.95
Houston,Tex. S5	4.10
Ind.Harbor,Ind. I-2, Y1	3.70
Johnstown,Pa. B2	3.70
Lackawanna,N.Y. B2	3.70
Minnequa,Colo. C10	4.50
Munhall,Pa. U5	3.70
Pittsburgh J5	3.70
Seattle B3	4.60
Sharon,Pa. S3	3.95
So.Chicago,Ill. U5, W14	3.70
SparrowsPoint,Md. B2	3.70
Steubenville,O. W10	3.70
Warren,O. R2	3.70
Weirton,W.Va. W6	4.00
Youngstown R2, U5, Y1	3.70

PLATES, Carbon A. R.

Fontana,Calif. K1	5.45
Geneva,Utah G1	4.85

PLATES, Wrought Iron

Economy,Pa. B14	8.60

BARS, Hot-Rolled Carbon

AlabamaCity,Ala. R2	3.70
Aliquippa,Pa. J5	3.70
Alton,Ill.(1) L1	3.95
Atlanta,Ga. A11	4.25
Bessemer,Ala. T2	3.70
Buffalo R2	3.70
Canton,O. R2	3.70
Clairton,Pa. U5	3.70
Cleveland R2	3.70
Detroit R7	3.85
Emeryville,Calif. J7	4.45
Fairfield,Ala. T2	3.70
Fontana,Calif. K1	4.40
Gary,Ind. U5	3.70
Houston,Tex. S5	4.10
Ind.Harbor,Ind. I-2, Y1	3.70
Johnstown,Pa. B2	3.70
KansasCity,Mo. S5	4.30
Lackawanna,N.Y. B2	3.70
LosAngeles B3	4.40
Milton,Pa. B6	4.20
Minnequa,Colo. C10	4.15
Niles,Calif. P1	5.05
N.Tonawanda,N.Y. B11	3.70
Pittsburg,Calif. C11	4.40
Pittsburgh J5	3.70
Portland,Oreg. O4	4.65
Seattle B3, N14	4.45
So.Chicago R2, U5, W14	3.70
So.Duquesne,Pa. U5	3.70
So.SanFran.,Cal. B3	4.45
Struthers,O. Y1	3.70
Torrance,Calif. C11	4.40
Weirton,W.Va. W6	3.85
Youngstown R2, U5	3.70

BAR SIZE ANGLES; S. SHAPES

Aliquippa,Pa. J5	3.70
Atlanta A11	4.25
Johnstown,Pa. B2	3.70
Lackawanna,N.Y. B2	3.70
Niles,Calif. P1	5.05
Portland,Oreg. O4	4.65
SanFrancisco S7	4.85

BAR SIZE ANGLES; H.R. CARBON

Bethlehem,Pa. B2	3.90

BARS, Hot-Rolled Alloy

Bethlehem,Pa. B2	4.30
Buffalo R2	4.30
Canton,O. R2	4.30
Canton,O.(29) T7	3.95
Clairton,Pa. U5	4.30
Detroit R7	4.45
Ecorse,Mich. G5	4.65
Fontana,Calif. K1	5.35
Gary,Ind. U5	4.30
Houston,Tex. S5	4.70
Ind.Harbor,Ind. I-2, Y1	4.30
Johnstown,Pa. B2	4.30
KansasCity,Mo. S5	4.90
Lackawanna,N.Y. B2	4.30
LosAngeles B3	5.35
Massillon,O. R2	4.30
Midland,Pa. C18	4.30
So.Chicago R2,U5,W14	4.30
So.Duquesne,Pa. U5	4.30
Struthers,O. Y1	4.30
Warren,O. C17	4.30
Youngstown U5	4.30

BAR SHAPES, Hot-Rolled Alloy

Clairton,Pa. U5	4.55
Gary,Ind. U5	4.55
Youngstown U5	4.55

BARS & SMALL SHAPES, H.R., High-Strength Low-Alloy

Aliquippa,Pa. J5	5.55
Bessemer,Ala. T2	5.55
Bethlehem,Pa. B2	5.55
Clairton,Pa. U5	5.55
Cleveland R2	5.55
Fairfield,Ala. T2	5.55
Fontana,Calif. K1	6.60
Gary,Ind. U5	5.55
Ind.Harbor,Ind. I-2	5.55
IndianaHarbor,Ind. Y1	6.05
Johnstown,Pa. B2	5.55
Lackawanna,N.Y. B2	5.55
LosAngeles B3	6.25
Pittsburgh J5	5.55
Seattle B3	6.30
So.Duquesne,Pa. U5	5.55
So.SanFrancisco B3	6.30
Struthers,O. Y1	6.05
Youngstown U5	5.55

BARS, Cold-Finished Carbon

Ambridge,Pa. W18	4.55
BeaverFalls,Pa.M12,R2	4.55
Buffalo B5	4.60
Camden,N.J. P13	5.00
Carnegie,Pa. C12	4.55
Chicago W18	4.55
Cleveland A7, C20	4.55
Detroit P17	4.70
Donora,Pa. A7	4.55
Elyria,O. W8	4.55
FranklinPark,Ill. N5	4.55
Gary,Ind. R2	4.55
GreenBay,Wis. F7	4.55
Hammond,Ind. L2, M13	4.55
Hartford,Conn. R2	5.10
Harvey,Ill. B5	4.55
LosAngeles R2	6.00
Mansfield,Mass. B5	5.10
Massillon,O. R2, R8	4.55
Monaca,Pa. S17	4.55
Newark,N.J. W18	5.00
Plymouth,Mich. P5	4.80
Pittsburgh J5	4.55
Putnam,Conn. W18	5.10
Readville,Mass. C14	5.10
St.Louis,Mo. M5	4.95
So.Chicago,Ill. W14	4.55
SpringCity,Pa.(5) K3	5.00
Struthers,O. Y1	4.55
Waukegan,Ill. A7	4.55
Youngstown F3, Y1	4.55

BARS, Cold-Finished Alloy

Ambridge,Pa. W18	5.40
BeaverFalls,Pa. M12	5.40
Bethlehem,Pa. B2	5.40
Buffalo B5	5.40
Camden,N.J. P13	5.80
Canton,O. R2	5.40
Canton,O.(29) T7	4.90
Carnegie,Pa. C12	5.40
Chicago W18	5.40
Cleveland A7	5.45
Cleveland C20	5.40
Detroit P17	5.55
Donora,Pa. A7	5.45
Elyria,O. W8	5.40
Gary,Ind. R2	5.40
Hammond,Ind. L2, M13	5.40
Hartford,Conn. R2	5.85
Harvey,Ill. B5	5.40
Lackawanna,N.Y. B2	5.40
Mansfield,Mass. B5	5.85
Massillon,O. R2, R8	5.40
Midland,Pa. C18	5.40
Monaca,Pa. S17	5.40
Newark,N.J. W18	5.75
Plymouth,Mich. P5	5.60
So.Chicago,Ill. R2, W14	5.40
Struthers,O. Y1	5.40
Warren,O. C17	5.40
Waukegan,Ill. A7	5.45
Worcester,Mass. A7	5.75
Youngstown F3, Y1	5.40

RAIL STEEL BARS

ChicagoHts.(3,4) C2	4.75
ChicagoHts.(3,4) I-2	4.50
Franklin,Pa.(3, 4) F5	4.75
FortWorth,Tex.(26) T4	4.85
Huntngtn,W.Va.(3) W7	5.50
Marion,O.(3) P11	4.75
Moline,Ill.(3) R2	3.80
Tonawanda (3,4) B12	4.75
Williamsport(3) S19	5.00
Williamsport(4) S19	5.10

BARS, Wrought Iron

Dover,N.J.(Staybolt)U1	15.00
Dover,(Eng.Bolt) U1	13.50
Dover(Wrgt.Iron) U1	12.25
Economy,Pa. (S.R.) B14	9.60
Economy,Pa.(D.R.)B14	11.90
Economy,(Staybolt)B14	12.20
McK.Rks.(Staybolt) L5	14.50
McK.Rks.(S.R.) L5	9.60
McKRks.(D.R.) L5	13.00

BARS, Reinforcing (Fabricators)

AlabamaCity,Ala. R2	3.70
Alton,Ill.(6) L1	3.70
Atlanta A11	4.25
Buffalo R2	3.70
Cleveland R2	3.70
Emeryville,Calif. J7	4.45
Fairfield,Ala. T2	3.70
Fontana,Calif. K1	4.40
Gary,Ind. U5	3.70
Houston,Tex. S5	4.10
Ind.Harbor,Ind. I-2, Y1	3.70
Johnstown,Pa. B2	3.70
KansasCity,Mo. S5	4.30
Lackawanna,N.Y. B2	3.70
LosAngeles B3	4.40
Milton,Pa. B6	4.20
Minnequa,Colo. C10	4.50
Niles,Calif. P1	5.05
Pittsburg,Calif. C11	4.40
Pittsburgh J5	3.70
Portland,Oreg. O4	4.65
SandSprings,Okla. S5	4.60
Seattle B3, N14	4.45
So.Chicago,Ill. R2	3.70
So.Duquesne,Pa. U5	3.70
So.SanFrancisco B3	4.45
SparrowsPoint,Md. B2	3.70
Struthers,O. Y1	3.70
Torrance,Calif. C11	4.40
Youngstown R2, U5	3.70

BARS, Reinforcing

(Fabricated, to Consumers)

Huntington,W.Va. W7	5.50
Johnstown, ¼-1" B2	4.75
LosAngeles B3	5.45
Marion,O. P11	5.00
Seattle B3 N14	5.55
So.SanFrancisco B3	5.45
SparrowsPt. ¼-1" B2	4.75
Williamsport,Pa. S19	5.10

SHEETS, Hot-Rolled Steel

(18 gage and heavier)

AlabamaCity,Ala. R2	3.60
Ashland,Ky.(8) A10	3.60
Butler,Pa. A10	3.60
Cleveland J5, R2	3.60
Conshohocken,Pa. A3	4.00
Detroit M1	4.40
Ecorse,Mich.(8) G5	3.80
Fairfield,Ala. T2	3.60
Fontana,Calif. K1	4.55
Gary,Ind. U5	3.60
Geneva,Utah G1	3.70
GraniteCity,Ill. G4	4.30
Ind.Harbor,Ind. I-2,Y1	3.60
Irvin,Pa. U5	3.60
Lackawanna,N.Y. B2	3.60
Munhall,Pa. U5	3.60
Niles,O. N12	5.25
Pittsburg,Calif. C11	4.30
Pittsburgh J5	3.60
Sharon,Pa. S3	4.00
So.Chicago,Ill. W14	3.60
SparrowsPoint,Md. B2	3.60
Steubenville,O. W10	3.60
Torrance,Calif. C11	4.30
Warren,O. R2	3.60
Weirton,W.Va. W6	3.60
WestLeechburg,Pa. A4	3.75
Youngstown U5, Y1	3.60

SHEETS, H.R., (19 gage)

AlabamaCity,Ala. R2	4.75
Dover, O. R1	5.65
Ind.Harbor,Ind. I-2	5.40
Mansfield,O. E6	5.65
Niles,O. N12	5.75
Torrance,Calif. C11	5.40

SHEETS, H.R. (14-ga., heavier) High-Strength Low-Alloy

Cleveland J5, R2	5.40
Conshohocken,Pa. A3	5.65
Ecorse,Mich. G5	5.95
Fairfield,Ala. T2	5.40
Fontana,Calif. K1	6.35
Gary,Ind. U5	5.40
Ind.Harbor,Ind. I-2	5.40
IndianaHarbor,Ind. Y1	5.90
Irvin,Pa. U5	5.40
Lackawanna(35) B2	5.40
Pittsburgh J5	5.40
Sharon,Pa. S3	5.40
So.Chicago,Ill. U5	5.40
SparrowsPoint(36) B2	5.40
Warren,O. R2	5.40
Weirton,W.Va. W6	5.77
Youngstown U5	5.40
Youngstown Y1	5.90

SHEETS, Cold-Rolled High-Strength Low-Alloy

Cleveland J5, R2	6.55
Ecorse,Mich. G5	7.10
Fontana,Calif. K1	7.50
Gary,Ind. U5	6.55
IndianaHarbor,Ind. Y1	7.05
IndianaHarbor,Ind. I-2	6.55
Irvin,Pa. U5	6.55
Lackawanna(37) B2	6.55
Pittsburgh J5	6.55
SparrowsPoint(38) B2	6.55
Warren,O. R2	6.55
Weirton,W.Va. W6	6.90
Youngstown Y1	7.05

SHEETS, Cold-Rolled Steel (Commercial Quality)

Butler,Pa. A10	4.35
Cleveland J5, R2	4.35
Ecorse,Mich. G5	4.55
Fairfield,Ala. T2	4.35
Follansbee,W.Va. F4	5.35
Fontana, Calif. K1	5.30
Gary,Ind. U5	4.35
GraniteCity,Ill. G4	5.05
Ind.Harbor, Ind. I-2, Y1	4.35
Irvin,Pa. U5	4.35
Lackawanna,N.Y. B2	4.35
Middletown,O. A10	4.35
Pittsburg,Calif. C11	5.30
Pittsburgh J5	4.35
SparrowsPoint,Md. B2	4.35
Steubenville,O. W10	4.35
Warren,O. R2	4.35
Weirton,W.Va. W6	4.35
Youngstown Y1	4.35

SHEETS, Galv'd No. 10 Steel

AlabamaCity,Ala. R2	4.80
Ashland,Ky.(8) A10	4.80
Canton,O. R2	4.80
Dover,O. R1	5.50
Fairfield,Ala. T2	4.80
Gary,Ind. U5	4.80
GraniteCity,Ill. G4	5.50
Ind.Harbor,Ind. I-2	4.80
Irvin,Pa. U5	4.80
Kokomo,Ind.(13) C16	5.20
MartinsFerry,O. W10	4.80
Niles,O. N12	6.00
Pittsburg,Calif. C11	5.55
SparrowsPoint,Md. B2	4.80
Steubenville,O. W10	4.80
Torrance,Calif. C11	5.55
Weirton,W.Va. W6	4.80

SHEETS, Galvanized No. 10, High-Strength Low-Alloy

Irvin,Pa. U5	7.20
SparrowsPoint(39) B2	6.75

SHEETS, Galvannealed Steel

Canton,O. R2	5.35
Irvin,Pa. U5	5.35
Kokomo,Ind(13) C16	5.75
Niles,O. N12	6.55

SHEETS, ZINCGRIP Steel No. 10

Butler,Pa. A10	5.05
Middletown,O. A10	5.05

SHEETS, Electro Galvanized

Cleveland R2 (28)	5.65
Niles,O. R2 (28)	5.65
Weirton,W.Va. W6	5.50

SHEETS, Zinc Alloy

Ind.Harbor,Ind. I-2	5.70

SHEETS, Drum Body

Pittsburg,Calif. C11	4.30
Torrance,Calif. C11	4.30

SHEETS, Well Casing

Fontana,Calif. K1	5.10
Torrance,Calif. C11	5.10

BLUED Stock, 29 Ga.

Yorkville,O. W10	6.80
Folansbee,W.Va.(23)F4	6.85

ROOFING SHORT TERNES (8 lb. coated)

Gary,Ind. U5	9.50

MANUFACTURING TERNES (Special Coated)

Fairfield,Ala. T2	$7.60
Gary,Ind. U5	7.50
Irvin,Pa. U5	7.50
SparrowsPoint,Md. B2	7.60
Yorkville,O. W10	7.50

SHEETS, LT. Coated Ternes, 6 lb

Yorkville,O. W10	$8.40

SHEETS, Mfg. Ternes, 8 lb (Commercial Quality)

Gary,Ind. U5	$9.50
Yorkville,O. W10	9.50

SHEETS, Long Terne Steel (Commercial Quality)

BeechBottom,W.Va.W10	5.20
Gary,Ind. U5	5.20
Mansfield,O. E6	6.05
Middletown,O. A10	5.20
Niles,O. N12	6.00
Weirton,W.Va. W6	5.20

SHEETS, Long Terne, Ingot Iron

Middletown,O. A10	5.60

SHEETS, Enameling Iron

Ashland,Ky. (8) A10	4.65
Cleveland R2	4.65
Gary,Ind. U5	4.65
GraniteCity,Ill. G4	5.35
Ind.Harbor,Ind. I-2	4.65
Irvin,Pa. U5	4.65
Middletown,O. A10	4.65
Youngstown Y1	4.65

SHEETS, Culvert No. 16

	Cu Alloy	Cu Fe
Ashland A10	5.60	...
Canton,O. R2	5.65	6.10
Fairfield,Ala. T2	5.60	5.85
Gary, U5	5.60	5.85
IndianaHarbor I-2	5.60	5.85
Irvin,Pa. U5	5.60	5.85
Kokomo C16	6.25	...
MartinsFy.O. W10	5.60	5.85
Pittsburg,Cal. C11	6.35	...
SparrowsPt. B2	5.60	...
Torrance,Cal C11	6.35	...

SHEETS, Culvert, No. 16 Pure Iron

Ashland,Ky. A10	5.85
Fairfield,Ala. T2	5.85

SHEETS, Hot-Rolled Ingot Iron 18 Gage and Heavier

Ashland(8) A10	3.85
Cleveland R2	4.20
Ind.Harbor,Ind. I-2	3.85
Warren,O. R2	4.20

SHEETS, Cold-Rolled Ingot Iron

Cleveland R2	4.95
Middletown,O. A10	4.85
Warren,O. R2	4.95

SHEETS, Galvanized Ingot Iron No. 10 flat

Ashland,Ky.(8) A10	5.05
Canton,O. R2	5.55

SHEETS, ZINCGRIP Ingot Iron

Butler,Pa. A10	5.30
Middletown,O. A10	5.30

SHEETS, ALUMINIZED

Butler,Pa. A10	8.15

TIN PLATE, Electrolytic (Base Box)

	0.25 lb	0.50 lb	0.75 lb
Aliquippa,Pa. J5	$7.15	$7.40	$7.80
Fairfield,Ala. T2	7.25	7.50	7.90
Gary,Ind. U5	7.15	7.40	7.80
GraniteCity,Ill. G4	7.35	7.60	8.00
Ind.Harbor,Ind. I-2, Y1	7.45	7.40	7.80
Irvin,Pa. U5	7.15	7.40	7.80
Niles,O. R2	7.15	7.40	7.80
Pittsburg,Calif. C11	7.90	8.15	8.55
SparrowsPoint,Md. B2	7.25	7.50	7.90
Weirton,W.Va. W6	7.15	7.40	7.80
Yorkville,O. W10	7.15	7.40	7.80

SHEETS, SILICON, H.R. or C.R.(22 Ga.) COILS (Cut Lengths ½c lower)

	Field	Armature	Electric	Motor	Dynamo
BeechBottom W10 (cut lengths)	...	...	7.25	8.50	9.30
Brackenridge,Pa. A4	...	...	7.75	9.00	9.80
GraniteCity,Ill.G4 (cut lengths)	...	...	7.95	9.20	...
Ind.Harbor,Ind. I-2	6.95	7.25	(34)	...	...
Mansfield,O. E6 (cut lengths)	7.10	7.25	7.75	9.00	9.80
Niles,O. N12 (cut lengths)	...	6.75	7.25	...	...
Vandergrift,Pa. U5		7.25	7.75	9.00	9.80
Warren,O. R2	6.95	7.25	7.75	9.00	9.80
Zanesville,O. A10		7.25	7.75	9.00	9.80

SHEETS, SILICON (22 Ga. Base) Coils (Cut Lengths ½c lower)

Transformer Grade	72	65	58	52
BeechBottom W10 (cut lengths)	9.85	10.40	11.10	11.90
Brackenridge,Pa. A4	10.35	....	....	....
Vandergrift,Pa. U5	10.35	10.90	11.60	12.40
Warren,O. R2	10.35	....	....	....
Zanesville,O. A10	10.35	10.90	11.60	12.40

H.R. or C.R. COILS AND CUT LENGHTS, SILICON (22 Ga.)

	T-100	T-90	T-80	T-73
Butler,Pa. A10 (C.R.)	....	....	14.75	15.25
Vandergrift,Pa. U5	12.90	13.75	14.75	15.25

TIN PLATE, American Coke (Base Box)

	1.25 lb	1.50 lb
Aliquippa J5	$8.45	$8.70
Fairfield,Ala. T2	8.55	8.80
Gary U5	8.45	8.70
Ind.Har. I-2, Y1	8.45	8.70
Irvin,Pa. U5	8.45	8.70
Pitts.,Cal. C11	9.20	9.45
Sp.Pt.,Md. B2	8.55	8.80
Warren R2	8.45	8.70
Weirton W6	8.45	8.70
Yorkville,O. W10	8.45	8.70

BLACK PLATE (Base Box)

Aliquippa J5	$6.25
Fairfield,Ala. T2	6.35
Gary,Ind. U5	6.25
GraniteCity,Ill. G4	6.45
Ind.Harbor,Ind. I-2, Y1	6.25
Irvin,Pa. U5	6.25
Niles,O. R2	6.25
Pittsburg,Calif. C11	7.00
SparrowsPoint,Md. B2	6.35
Warren,O. R2	6.25
Weirton,W.Va. W6	6.25
Yorkville,O. W10	6.25

HOLLOWARE ENAMELING Black Plate (29 gage)

Follansbee,W.Va. F4	5.85
Gary,Ind. U5	5.85
GraniteCity,Ill. G4	6.05
Ind.Harbor,Ind. Y1	5.30
Irvin,Pa. U5	5.85
Yorkville,O. W10	6.15

STRIP, Hot-Rolled Alloy

Bridgprt,Conn.(10) S15	5.45
Carnegie,Pa. S18	5.85
Fontana,Calif. K1	6.70
Gary,Ind. U5	5.50
Houston,Tex. S5	5.90
KansasCity,Mo. S5	6.10
Midland,Pa. C18	5.85
NewBritn,Conn.(10) S15	5.45
Sharon,Pa. S8	5.85
Youngstown U5	5.50

STRIP, Hot-Rolled, High-Strength Low-Alloy

Bessemer,Ala. T2	5.30
Conshohocken,Pa. A3	5.55
Ecorse,Mich. G5	5.95
Fairfield,Ala. T2	5.30
Fontana,Calif. K1	6.20
Gary,Ind. U5	5.30
Ind.Harb.,Ind. I-2	5.30
IndianaHarbor,Ind. Y1	5.80
Lackawanna,N.Y. B2	4.95
LosAngeles(25) B3	6.05
Seattle B3	6.30
Sharon,Pa. S3	5.40
So.SanFrancisco(25) B3	6.05
SparrowsPoint,Md. B2	4.95
Warren,O. R2	5.30
Weirton,W.Va. W6	5.75
Youngstown Y1	5.80
Youngstown U5	5.30

STRIP, Cold-Rolled, High-Strength Low-Alloy

Cleveland J5	6.70
Cleveland A7	6.55
Dover,O. G6	7.30
Fontana,Calif. K1	6.95
Lackawanna,N.Y. B2	6.40
Sharon,Pa. S3	6.55
SparrowsPoint,Md. B2	6.40
Warren,O. R2	6.55
Weirton,W.Va. W6	7.20
Youngstown Y1	7.05

STRIP, Hot-Rolled Carbon

Ala.City,Ala.(27) R2	3.50
Alton,Ill.(1) L1	3.75
Ashland,Ky.(8) A10	3.50
Atlanta A11	4.05
Bessemer,Ala. T2	3.50
Bridgeprt.Conn.(10) S15	4.00
Buffalo(27) R2	3.50
Butler,Pa. A10	3.50
Carnegie,Pa. S18	4.00
Conshohocken,Pa. A3	3.90
Detroit M1	4.40
Ecorse,Mich. G5	3.80
Fairfield,Ala. T2	3.50
Fontana,Calif. K1	4.75
Gary,Ind. U5	3.50
Houston,Tex. S5	4.90
Ind.Harbor,Ind. I-2, Y1	3.50
Johnstown,Pa.(25) B2	3.50
KansasCity,Mo.(9) S5	4.10
Lackawanna,N.Y.(32)B2	3.50
LosAngeles B3	4.25
Milton,Pa. B6	4.00
Minnequa,Colo. C10	4.55
NewBritain(10) S15	4.00
No.Tonawanda,N.Y. B11	3.50
Pittsburg,Calif. C11	4.25
Riverdale,Ill. A1	3.50
SanFrancisco S7	4.85
Seattle B3, N14	4.50
Sharon,Pa. S3	4.00
So.Chicago,Ill. W14	3.50
So.SanFrancisco B3	4.25
SparrowsPoint,Md. B2	3.50
Torrance,Calif. C11	4.25
Warren,O. R2	3.50
Weirton,W.Va. W6	3.60
WestLeechburg,Pa. A4	3.75
Youngstown U5, Y1	3.50

STRIP, Cold-Rolled Alloy Steel

Bridgeprt,Conn.(10)S15	10.75
Carnegie,Pa. S18	10.60
Cleveland A7	10.00
Dover,O. G6	10.50
Fontana,Calif. K1	11.65
Harrison,N.J. C18	10.60
Midland,Pa. C18	10.60
NewBritn,Conn.(10)S15	10.75
Pawtucket,R.I.(11) N8	10.75
Pawtucket,R.I.(12) N8	11.05
Sharon,Pa. S3	10.60
Worcester,Mass. A7	10.30
Youngstown C8	10.60

STRIP, Cold-Rolled Carbon

Anderson,Ind.(40) G6	5.50
Berea,O. C7	6.60
Bridgprt,Conn.(10) S15	5.35
Butler,Pa. A10	4.65
Cleveland A7, J5	4.65
Dearborn,Mich. D3	5.60
Detroit D2	5.60
Detroit M1	5.45
Dover,O.(40) G6	5.50
Ecorse,Mich. G5	4.85
Follansbee,W.Va. F4	5.35
Fontana,Calif. K1	6.30
FranklinPark,Ill.(40) T6	4.90
Ind.Harbor,Ind. I-2	4.90
Lackawanna,N.Y. B2	4.65
LosAngeles C1	6.40
Mattapan,Mass. T6	5.50
Middletown,O. A10	4.65
NewBritain(10) S15	5.35
NewCastle,Pa. B4	5.35
NewCastle(40) E5	5.25
NewHaven,Conn. D2	5.85
NewHaven,Conn. A7	5.15
Pawtucket,R.I. R3	6.00
Pawtucket,R.I.(21) N8	5.85
Riverdale,Ill.(40) A1	4.90
Rome,N.Y. R6	5.10
Sharon,Pa. S3	5.35
SparrowsPoint,Md. B2	4.65
Trenton,N.J. R5	6.00
Wallingford,Conn. W2	5.85
Warren,O.(40) T5	5.25
Warren,O. R2	4.65
Weirton,W.Va. W6	4.65
Youngstown C8 (40)	5.25
Youngstown Y1	4.65

STRIP, Electro Galvanized

Dover,O. G6	5.50
Warren,O. T5	5.25
Weirton,W.Va. W6	4.65
Youngstown C8	5.25

STRIP, Cold-Finished, Spring Steel (Annealed)	0.26-0.40C	0.41-0.60C	0.61-0.80C	0.81-1.05C	1.06-1.35C
Berea,O. C7	...	6.80	7.40	9.35	11.65
Bridgeport,Conn.(10) S15	5.35	6.80	7.40	9.35	11.65
Bristol,Conn. W1	...	...	7.70	9.65	...
Carnegie,Pa. S18	...	6.80	7.40	9.35	11.65
Cleveland A7	4.65	6.45	7.40	9.35	11.65
Dearborn,Mich. D3	5.60	7.05	7.65	...	...
Detroit D2	5.60	6.65	7.25	...	...
Dover,O. G6	5.50	6.80	7.40	9.35	11.65
FranklinPark,Ill. T6	5.00	6.60	7.55	9.50	11.80
Harrison,N.J. C18	...	...	7.70	9.65	11.95
Mattapan,Mass. T6	5.50	6.75	7.70	9.65	11.95
NewBritn.,Conn.(10) S15	5.35	6.80	7.40	9.35	11.65
NewCastle,Pa. B4	5.35	6.80	7.40	9.35	...
New Castle,Pa. E5	5.50	6.80	7.40	9.35	11.65
NewHaven,Conn. D2	5.85	6.75	7.35	...	...
NewYork W3	...	7.10	7.70	9.65	11.95
Pawtucket,R.I. N8:					
Cleve.-or-Pitts.Base	...	6.80	7.40	9.35	11.65
Worcester,Base	5.85	7.10	7.70	9.65	11.95
Sharon,Pa. S3	5.35	6.80	7.40	9.35	11.65
Trenton,N.J. R5	...	7.10	7.70	9.65	11.95
Wallingford,Conn. W2	5.85	6.75	7.35	9.30	11.60
Weirton,W.Va. W6	5.35	6.80	7.40	9.35	11.65
Worcester,Mass. A7	4.95	6.75	7.70	9.65	11.95
Worcester,Mass. T6	5.50	6.75	7.70	9.65	11.95
Youngstown C8	...	6.80	7.40	9.35	11.65
Spring Steel (Tempered)					
Trenton,N.J. R5	...	...	10.30	12.50	15.35
Harrison,N.J. C18	...	...	10.30	12.50	15.35
NewYork W3	...	...	10.30	12.50	15.35

Key to Producers

A1	Acme Steel Co.
A3	Alan Wood Steel Co.
A4	Allegheny Ludlum Steel
A7	American Steel & Wire
A8	Anchor Drawn Steel Co.
A9	Angell Nail & Chaplet
A10	Armco Steel Corp.
A11	Atlantic Steel Co.
A13	American Cladmetals Co.
B1	Babcock & Wilcox Tube
B2	Bethlehem Steel Co.
B3	Beth. Pac. Coast Steel
B4	Blair Strip Steel Co.
B5	Bliss & Laughlin Inc.
B6	Boiardi Steel Corp.
B8	Braeburn Alloy Steel
B11	Buffalo Bolt Co.
B12	Buffalo Steel Co.
B14	A. M. Byers Co.
C1	Calstrip Steel Corp.
C2	Calumet Steel Div. Borg-Warner Corp.
C4	Carpenter Steel Co.
C5	Central Iron & Steel Div. Barium Steel Corp.
C7	Cleve. Cold Rolling Mills
C8	Cold Metal Products Co.
C9	Colonial Steel Co.
C10	Colorado Fuel & Iron
C11	Columbia Steel Co.
C12	Columbia Steel & Shaft
C13	Columbia Tool Steel Co.
C14	Compressed Steel Shaft
C16	Continental Steel Corp.
C17	Copperweld Steel Co.
C18	Crucible Steel Co.
C19	Cumberland Steel Co.
C20	Cuyahoga Steel & Wire
C22	Claymont Steel Corp.
D2	Detroit Steel Corp.
D3	Detroit Tube & Steel
D4	Disston & Sons, Henry
D6	Driver Harris Co.
D7	Dickson Weatherproof Nail Co.
E1	Eastern Gas&Fuel Assoc.
E2	Eastern Stainless Steel
E4	Electro Metallurgical Co.
E5	Elliott Bros. Steel Co.
E6	Empire Steel Corp.
F2	Firth Sterling Steel
F3	Fitzsimons Steel Co.
F4	Follansbee Steel Corp.
F5	Franklin Steel Div., Borg-Warner Corp.
F6	Fretz-Moon Tube Co.
F7	Ft. Howard Steel & Wire
G1	Geneva Steel Co.
G2	Globe Iron Co.
G3	Globe Steel Tubes Co.
G4	Granite City Steel Co.
G5	Great Lakes Steel Corp
G6	Greer Steel Co.
H1	Hanna Furnace Corp.
I-1	Igoe Bros. Inc.
I-2	Inland Steel Co.
I-3	Interlake Iron Corp.
I-4	Ingersoll Steel Div., Borg-Warner Corp.
J1	Jackson Iron & Steel Co.
J3	Jessop Steel Co.
J4	Johnson Steel & Wire Co.
J5	Jones & Laughlin Steel
J6	Joslyn Mfg. & Supply
J7	Judson Steel Corp.
J8	Jersey Shore Steel Co.
K1	Kaiser Steel Corp.
K2	Keokuk Electro Metals
K3	Keystone Drawn Steel
K4	Keystone Steel & Wire
L1	Laclede Steel Co.
L2	LaSalle Steel Co.
L3	Latrobe Electric Steel
L5	Lockhart Iron & Steel
L6	Lone Star Steel Co.
L7	Lukens Steel Co.

STRIP, Hot-Rolled Ingot Iron

Ashland,Ky. (8) A10	3.75
Warren,O. R2	4.10

STRIP, Cold-Rolled Ingot Iron

Warren,O. R2	5.25

TIGHT COOPERAGE HOOP

Atlanta A11	4.05
Riverdale,Ill. A1	3.90
Sharon,Pa. S3	4.15
Youngstown U5	3.75

WIRE, Merchant Quality

(6 to 8 gage)	An'ld	Galv.
AlabamaCity R2	5.70	5.95
Aliquippa J5	5.70	6.15
Atlanta A11	5.95	6.40
Bartonville(19) K4	5.70	6.15
Buffalo W12	4.85	...
Cleveland A7	5.70	6.15
Crawfordsvile M8	5.95	6.40
Donora A7	5.70	6.15
Duluth A7	5.70	6.15
Fairfield T2	5.70	6.15
Houston,Tex. S5	6.10	6.55
Johnstown B2	5.70	6.15
Joliet,Ill. A7	5.70	6.15
KansasCy,Mo. S5	6.30	6.75
Kokomo C16	5.80	6.05
LosAngeles B3	6.65	...
Minnequa C10	5.95	6.45
Monessen P7	5.95	6.40
Palmer W12	5.15	...
Pitts.Calif. C11	6.65	6.80
Prtsmth.(18)P12	6.10	6.60
Rankin A7	5.70	6.15
So.Chicago R2	5.70	5.95
So.S.Fran. C10	6.65	7.10
SparrowsPt. B2	5.80	6.25
Sterling,Ill.(1)N15	5.70	6.15
Struthers,O. Y1	5.70	6.15
Torrance,Cal. C11	6.65	...
Worcester A7	6.00	6.45

WIRE (16 gage)

WIRE (16 gage)	An'ld Stone	Galv. Stone
Aliquippa J5	10.15	12.15
Bartonville(1) K4	10.25	11.95
Cleveland A7	10.25	12.15
Crawfrdsvle M8	10.30	12.00
Fostoria,O. S1	10.40	13.00
Johnstown B2	10.25	12.15
Kokomo C16	10.25	11.95
Minnequa C10	10.40	12.40
Palmer,Mass.W12	10.25	12.15
Pitts.Cal. C11	10.60	12.50
Prtsmth.(18) P12	10.55	12.30
SparrowsPt. B2	10.35	12.25
Waukegan A7	10.25	12.15

ROPE WIRE

ROPE WIRE	(A)	(B)
Bartonville,Ill. K4	8.55	8.80
Buffalo W12	8.55	8.80
Fostoria, O. S1	8.85	9.10
Johnstown,Pa. B2	8.55	8.80
Monessen,Pa. P16	8.55	8.80
Monessen,Pa. P7	8.80	9.05
Palmer,Mass. W12	8.85	9.10
Portsmouth,O. P12	8.55	8.80
Roebling,N.J. R5	8.85	9.10
SparrowsPt. B2	8.65	8.90
Struthers, O. Y1	8.55	8.80
Worcester J4, T6	8.85	9.10

(A) Plow and Mild Plow.
(B) Improved Plow.

WIRE, Manufacturers Bright, Low Carbon

AlabamaCity,Ala. R2	4.85
Aliquippa,Pa. J5	4.85
Atlanta A11	5.10
Alton,Ill.(1) L1	4.85
Bartonville,Ill.(1) K4	4.85
Buffalo W12	4.85
Chicago W13	5.10
Cleveland A7, C20	4.85
Crawfordsville,Ind. M8	5.10
Donora,Pa. A7	4.85
Duluth,Pa. A7	4.85
Fairfield,Ala. T2	4.85
Fostoria,O.(24) S1	5.35
Houston S5	5.25
Johnstown,Pa. B2	4.85
Joliet, Ill. A7	4.85
KansasCity,Mo. S5	5.45
Kokomo,Ind. C16	4.95
LosAngeles B3	5.80
Minnequa,Colo. C10	5.10
Monessen,Pa. P7	5.10
Newark, 6-8ga. I-1	5.50
No. Tonawanda B11	4.85
Palmer,Mass. W12	5.15
Pittsburg,Calif. C11	5.80
Portsmouth,O. P12	5.25
Rankin,Pa. A7	4.85
So.Chicago,Ill. R2	4.85
So.SanFrancisco C10	5.80
SparrowsPoint,Md. B2	4.95
Sterling,Ill.(1) N15	4.85
Struthers,O. Y1	4.85
Torrance,Calif. C11	5.80
Waukegan,Ill. A7	4.85
Worcester,Mass. A7, T6	5.15

WIRE, Cold-Rolled Flat

Anderson,Ind. G6	6.20
Buffalo W12	6.35
Cleveland A7	5.85
Crawfordsville,Ind. M8	6.20
Detroit D2	6.20
Dover,O. G6	6.20
Fostoria,O. S1	6.00
Kokomo,Ind. C16	5.70
FranklinPark,Ill. T6	6.20
Massillon,O. R8	5.85
Monessen,Pa. P16	5.85
Monessen,Pa. P7	6.10
NewHaven,Conn. D2	6.50
Pawtucket,R.I.(12) N8	6.85
Trenton,N.J. R5	6.15
Worcester A7	6.15
Worcester T6	6.50
Worcester W12	6.65

WIRE, Fine & Weaving(8" Coils)

Bartonville,Ill.(1) K4	8.90
Buffalo W12	8.90
Chicago W13	8.90
Cleveland A7	8.90
Crawfordsville,Ind. M8	8.95
Fostoria,O. S1	8.90
Johnstown,Pa. B2	8.90
Kokomo,Ind. C16	8.90
Monessen,Pa. P16	8.90
Palmer,Mass. W12	9.20
Portsmouth,O. P12	8.90
Roebling,N.J. R5	9.20
Waukegan,Ill. A7	8.90
Worcester,Mass. A7, T6	9.20

WIRE, Galv'd ACSR For Cores

Bartonville,Ill. K4	8.50
Monessen,Pa. P16	8.50
Roebling,N.J. R5	8.80
SparrowsPoint,Md. B2	8.60
Johnstown,Pa. B2	8.50

WIRE, Tire Bead

Bartonville,Ill.(1) K4	10.90
Monessen,Pa. P16	11.40
Roebling,N.J. R5	11.55

WIRE, MB Spring, High Carbon

Aliquippa,Pa. J5	6.25
Alton,Ill.(1) L1	6.25
Bartonville,Ill.(1) K4	6.25
Buffalo W12	6.25
Cleveland A7	6.25
Donora,Pa. A7	6.25
Duluth A7	6.25
Fostoria,O. S1	6.25
Johnstown,Pa. B2	6.25
LosAngeles B3	7.20
Milbury,Mass.(12) N6	8.05
Monessen,Pa. P7, P16	6.25
Palmer,Mass. W12	6.55
Pittsburg,Calif. C11	7.20
Roebling,N.J. R5	6.55
Portsmouth,O. P12	6.25
So.Chicago,Ill. R2	6.25
So.SanFrancisco C10	7.20
SparrowsPoint,Md. B2	6.35
Struthers,O. Y1	6.25
Trenton,N.J. A7	6.55
Waukegan,Ill. A7	6.25
Worcester A7, T6, W12	6.55
Worcester,Mass. J4	6.75

WIRE, Upholstery Spring

Aliquippa,Pa. J5	5.90
Alton,Ill.(1) L1	5.90
Buffalo W12	5.90
Cleveland A7	5.90
Donora,Pa. A7	5.90
Duluth A7	5.90
Johnstown,Pa. B2	5.90
LosAngeles B3	6.85
Monessen,Pa. P7, P16	5.90
NewHaven,Conn. A7	6.20
Palmer,Mass. W12	6.20
Pittsburg,Calif. C11	6.85
Portsmouth,O. P12	5.90
Roebling,N.J. R5	6.20
So.Chicago,Ill. R2	5.90
SoSanFrancisco C10	6.85
SparrowsPoint,Md. B2	6.00
Torrance,Calif. C11	6.85
Trenton,N.J. A7	6.20
Waukegan,Ill. A7	5.90
Worcester,Mass. A7	6.20

WOVEN FENCE, 9-15½ Ga. Col.

AlabamaCity,Ala. R2	126
Ala.City,Ala.,17-18ga.R2	213
Aliquippa,Pa.9-14½ga.J5	130
Atlanta A11	133
Bartonville,Ill.(19) K4	130
Crawfordsville,Ind. M8	132
Donora,Pa. A7	130
Duluth A7	130
Fairfield,Ala. T2	130
Houston,Tex. S5	138
Johnstown,Pa. B2	130
Johnstown,17ga.,6" B2	204
Johnstown,17ga.,4" B2	207
Joliet,Ill. A7	130
KansasCity,Mo. S5	142
Kokomo,Ind. C16	132
Minnequa,Colo. C10	138
Monessen,Pa. P7	135
Pitsburg,Calif. C11	153
Portsmouth,O.(18) P12	137
Rankin,Pa. A7	130
So.Chicago,Ill. R2	126
Sterling,Ill.(1) N15	130

FENCE POSTS

ChicagoHts.,Ill. C2	140
Duluth A7	125
Franklin,Pa. F5	140
Huntington,W.Va. W7	140
Johnstown,Pa. B2	140
Marion,O. P11	140
Minnequa,Colo. C10	130
Moline,Ill. R2	136
So.Chicago R2	140
Tonawanda B12	140
Williamsport,Pa. S19	150

WIRE, Barbed

WIRE, Barbed	Col.
AlabamaCity, Ala. R2	136
Aliquippa,Pa. J5	140
Atlanta A11	143
Bartonville,Ill.(19) K4	143
Crawfordsville M8	145
Donora,Pa. A7	140
Duluth,Minn. A7	140
Fairfield,Ala. T2	140
Houston,Tex. S5	148
Johnstown,Pa. B2	140
Joliet,Ill. A7	140
KansasCity,Mo. S5	152
Kokomo,Ind. C16	142
Minnequa,Colo. C10	146
Monessen,Pa. P7	145
Pittsburg,Calif. C11	160
Portsmouth,O.(18) P12	147
Rankin,Pa. A7	140
So.Chicago,Ill. R2	136
So.SanFran.,Calif. C10	160
SparrowsPoint,Md. B2	142
Sterling,Ill.(1) N15	140

BALE TIES, Single Loop

BALE TIES, Single Loop	Col.
AlabamaCity,Ala. R2	123
Atlanta A11	126
Bartonville,Ill.(19) K4	123
Crawfordsville M8	132
Donora,Pa. A7	123
Duluth A7	123
Fairfield,Ala T2	123
Joliet,Ill. A7	123
KansasCity,Mo. S5	135
Kokomo,Ind. C16	125
Minnequa,Colo. C10	128
Pittsburg,Calif. C11	147
So.Chicago,Ill. R2	123
So.SanFran.,Calif. C10	147
SparrowsPoint,Md. B2	125
Sterling,Ill.(1) N15	123

NAILS & STAPLES, Non-Stock

AlabamaCity,Ala. R2	6.10
Bartonville,Ill. (19) K4	5.95
Crawfordsville,Ind. M8	6.30
Donora,Pa. A7	5.95
Duluth A7	5.95
Johnstown,Pa. B2	5.95
Joliet,Ill. A7	5.95
Kokomo,Ind. C16	6.05
Minnequa,Colo. C10	6.20
Pittsburg,Calif. C11	6.90
Portsmouth,O. P12	6.25
Rankin,Pa. A7	5.95
So.Chicago,Ill. R2	6.10
SparrowsPoint,Md. B2	6.05
Sterling,Ill.(1) N15	5.65
Worcester,Mass. A7	6.25

NAILS, Cut (100 lb keg) To dealers (33)

Conshohocken,Pa. A3	$7.35
Wheeling,W.Va. W10	7.15

NAILS & STAPLES, Stock

To dealers & mfrs. (7)	Col.
AlabamaCity,Ala. R2	118
Aliquippa,Pa. (13) J5	118
Atlanta A11	121
Bartonville,Ill.(19) K4	118
Chicago,Ill. W13	118
Cleveland A9	125
Crawfordsville,Ind. M8	122
Donora,Pa. A7	118
Duluth A7	118
Fairfield,Ala. T2	118
Galveston,Tex. D7	126
Houston,Tex. S5	126
Johnstown,Pa. B2	118
Joliet,Ill. A7	118
KansasCity,Mo. S5	130
Kokomo,Ind. C16	120
Minnequa,Colo. C10	123
Monessen,Pa. P7	124
Pittsburg,Calif. C11	137
Portsmouth,O. P12	124
Rankin,Pa. A7	118
So.Chicago,Ill. R2	118
SparrowsPoint,Md. B2	120
Sterling,Ill.(1) N15	118
Torrance,Calif. C11	138
Worcester, Mass. A7	124

STANDARD TRACK SPIKES

Ind.Harbor,Ind. I-2, Y1	6.15
KansasCity,Mo. S5	6.40
Lebanon,Pa. B2	6.15
Minnequa,Colo. C10	6.15
Pittsburgh J5	6.15
Seattle B3	6.65
So.Chicago,Ill. R2	6.15
Struthers,O. Y1	6.15
Youngstown R2	6.15

TRACK BOLTS (20) Treated

KansasCity,Mo. S5	9.85
Lebanon,Pa.(32) B2	9.85
Minnequa,Colo. C10	9.85
Pittsburgh O3, P14	9.85
Seattle B3	10.10

TIE PLATES

Fairfield,Ala. T2	4.50
Gary,Ind. U5	4.50
Ind.Harbor,Ind. I-2	4.50
Lackawanna,N.Y. B2	4.50
Minnequa,Colo. C10	4.50
Pittsburgh,Calif. C11	4.65
Seattle B3	4.65
Steelton,Pa. B2	4.50
Torrance,Calif. C11	4.65

JOINT BARS

Bessemer,Pa. U5	4.70
Fairfield,Ala. T2	4.70
Ind.Harbor,Ind. I-2	4.70
Joliet,Ill. U5	4.70
Lackawanna,N.Y. B2	4.70
Minnequa,Colo. C10	4.70
Steelton,Pa. B2	4.70

AXLES

Ind.Harbor,Ind. S18	5.60
Johnstown,Pa. B2	5.60

RAILS

RAILS	Std. No. 1	Std. No. 2	Std. All No. 2	Tee Rails 60 lb Under
Bessemer,Pa. U5	3.60	3.50	3.55	4.00
Ensley,Ala. T2	3.60	3.50	...	4.00
Fairfield,Ala. T2	...	...	...	4.00
Gary,Ind. U5	3.60	3.50	3.55	...
Huntington,W.Va. W7	...	...	...	5.00
Ind.Harbor,Ind. I-2	3.60	3.50	3.55	...
Johnstown,Pa. B2	...	...	...	(16)4.00
Lackawanna B2	3.60	3.50	...	4.00
Minnequa,Colo. C10	3.60	3.50	...	4.50
Steelton,Pa. B2	3.60	3.50	...	...
Williampsort,Pa. S19	...	...	...	4.75

Key to Producers

M1	McLouth Steel Corp.
M4	Mahoning Valley Steel
M5	Medart Co.
M6	Mercer Tube & Mfg. Co.
M8	Mid-States Steel & Wire
M9	Midvale Co.
M12	Moltrup Steel Products
M13	Monarch Steel Co.
M14	McInnes Steel Co.
N2	National Supply Co.
N3	National Tube Co.
N5	Nelsen Steel & Wire Co.
N6	NewEng.HighCarb,Wire
N8	Newman-Crosby Steel
N12	Niles Rolling Mill Co.
N14	Nrthwst. Steel Roll. Mils
N15	Northwestern S.&W. Co.
N16	New-Delphos Mfg. Co.
O3	Oliver Iron & Steel Corp.
O4	Oregon Steel Mills
P1	Pacific States Steel Corp.
P2	Pacific Tube Co.
P4	Phoenix Iron & Steel Co.
P5	Pilgrim Drawn Steel
P6	Pittsburgh Coke & Chem.
P7	Pittsburgh Steel Co.
P9	Pittsburgh Tube Co.
P11	Pollak Steel Co.
P12	Portsmouth Division, Detroit Steel Corp.
P13	Precision Drawn Steel
P14	Pitts. Screw & Bolt Co.
P15	Pittsburgh Metallurgical
P16	Page Steel & Wire Div., Amer. Chain & Cable
P17	Plymouth Steel Co.
R1	Reeves Steel & Mfg. Co.
R2	Republic Steel Corp.
R3	Rhode Island Steel Corp.
R5	Roebling's Sons, John A.
R6	Rome Strip Steel Co.
R7	Rotary Electric Steel Co.
R8	RelianceDiv.,EatonMfg.
S1	Seneca Wire & Mfg. Co.
S3	Sharon Steel Corp.
S5	Sheffield Steel Corp.
S6	Shenango Furnace Co.
S7	Simmons Co.
S8	Simonds Saw & Steel Co.
S9	Sloss-Sheffield, S.&I. Co.
S13	Standard Forgings Corp.
S14	Standard Tube Co.
S15	Stanley Works
S16	Struthers Iron & Steel
S17	Superior Drawn Steel Co.
S18	Superior Steel Corp.
S19	Sweet's Steel Co.
S20	Southern States Steel
T2	Tenn. Coal, Iron & R.R.
T3	Tenn. Prod. & Chem.
T4	Texas Steel Co.
T5	Thomas Steel Co.
T6	Thompson Wire Co.
T7	Timken Roller Bearing
T9	Tonawanda Iron Div. Am. Rad. & Stan. San.
U1	Ulster Iron Works
U4	Universal Cyclops Steel
U5	United States Steel Co.
V2	Vanadium-Alloys Steel
V3	Vulcan Crucible Steel Co.
W1	Wallace Barnes Co.
W2	Wallingford Steel Co.
W3	Washburn Wire Co.
W4	Washington Steel Corp.
W6	Weirton Steel Co.
W7	W. Va. Steel & Mfg. Co.
W8	West.Auto.Mach.Screw
W9	Wheatland Tube Co.
W10	Wheeling Steel Corp.
W12	Wickwire Spencer Steel Div., Colo. Fuel & Iron
W13	Wilson Steel & Wire Co.
W14	Wisconsin Steel Div. Internatoinal Harvester
W15	Woodward Iron Co.
W18	Wyckoff Steel Co.
Y1	YoungstownSheet&Tube

TOOL STEEL

Grade	Cents per lb	Grade	Cents per lb
Reg. Carbon	23.00	13.5W,4Cr,3V	140.00
Extra Carbon	27.00	18W,4Cr,2V,9Co	217.50
Spec. Carbon	32.50	19W,4Cr,2V,7Co	217.50
Oil Hardening	35.00	18.25W,4.25Cr,1V,4.75Co	185.50
Cr. Hot Wrk	35.00	20.25W,4.25Cr,1.6V,12.25Co	323.00
Hi-Carbon-Cr	63.50	1.5W,4Cr,1V,8.5Mo	78.50
18W,4Cr,1V	123.50	6.4W,4.5Cr,1.9V,5Mo	87.00
18W,4Cr,2V	138.00	6W,4Cr,3V,6Mo	109.50

Tool steel producers include: A4, A8, B2, B8, C4, C9, C13, C18, D4, F2, J3, L3, M14, S8, U4, V2, V3.

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(1) Chicago base.
(2) Angles, flats, bands.
(3) Merchant. (4) Reinforcing.
(5) Philadelphia del.
(6) Chicago or Birm. base.
(7) To jobbers, 3 cols. lower.
(8) 16 gage and heavier.
(9) 6 in. and narrower.
(10) Pittsburgh base.
(11) Cleveland & Pittsburgh base.
(12) Worcester, Mass. base.
(13) Add 0.50c for 17 Ga. & heavier.
(14) Also wide flange beams.
(15) ½" and thinner.
(16) 40 lb and under.
(17) Flats only.
(18) To dealers.
(19) Chicago & Pittsburgh base.
(20) Deduct 0.25c for untreated.
(21) New Haven, Conn. base.
(22) Del. San Fran. Bay area.
(23) 28 Ga. 36" wide.
(24) Deduct 0.20c, finer than 15 Ga.
(25) Bar mill bands.
(26) Reinforcing, mill lengths, to fabricators; to consumers, 5.60c.
(27) Bar mill sizes.
(28) Bonderized.
(29) Subject to 10% increase.
(30) Sheared; add 0.35c for universal mill.
(31) Not annealed.
(32) Rd. edge or square edge.
(33) To jobbers, deduct 20 cents.
(34) 7.25c for cut lengths.
(35) 72" and narrower.
(36) 54" and narrower.
(37) 15 gage & lighter: 60" & narrower.
(38) 14 gage & lighter: 48" & narrower.
(39) 48" and narrower.
(40) Lighter than 0.035"; 0.035" and heavier, 0.25c higher.

CEILING PRICES, IRON AND STEEL SCRAP

Prices as set forth in Office of Price Stabilization ceiling price regulation No. 5, as amended Apr. 19, 1951

STEELMAKING SCRAP COMPOSITE

June 21	$44.00
June 14	44.00
May 1951	44.00
June 1950	39.25
June 1946	19.17

Based on No. 1 heavy melting grade at Pittsburgh, Chicago and eastern Pennsylvania.

Basing point ceiling prices per gross ton from which maximum shipping prices are computed on scrap of dealer and industrial origin; and from which ceiling on-line and ceiling delivered prices are computed on scrap of railroad origin.

No. 1 Heavy Melting Steel (Grade) 1

Basing Point	Dealer, Industrial	Railroad
Alabama City, Ala.	$39.00	$41.00
Ashland, Ky.	42.00	44.00
Atlanta, Ga.	39.00	41.00
Bethlehem, Pa.	42.00	44.00
Birmingham, Ala.	39.00	41.00
Brackenridge, Pa.	44.00	46.00
Buffalo, N. Y.	43.00	45.00
Butler, Pa.	44.00	46.00
Canton, O.	44.00	46.00
Chicago, Ill.	42.50	44.50
Cincinnati, O.	43.00	45.00
Claymont, Del.	42.50	44.50
Cleveland, O.	43.00	45.00
Coatesville, Pa.	42.50	44.50
Conshohocken, Pa.	42.50	44.50
Detroit, Mich.	41.15	43.15
Duluth, Minn.	40.00	42.00
Harrisburg, Pa.	42.50	44.50
Houston, Tex.	37.00	39.00
Johnstown, Pa.	44.00	46.00
Kansas City, Mo.	39.50	41.50
Kokomo, Ind.	42.00	44.00
Los Angeles	35.00	37.00
Middletown, O.	43.00	45.00
Midland, Pa.	44.00	46.00
Minnequa, Colo.	38.00	40.00
Monessen, Pa.	44.00	46.00
Phoenixville, Pa.	42.50	44.50
Pittsburg, Calif.	35.00	37.00
Pittsburgh, Pa.	44.00	46.00
Portland, Oreg.	35.00	37.00
Portsmouth, O.	42.00	44.00
St. Louis, Mo.	41.00	43.00
San Francisco	35.00	37.00
Seattle, Wash.	35.00	37.00
Sharon, Pa.	44.00	46.00
Sparrows Point, Md.	42.00	44.00
Steubenville, O.	44.00	46.00
Warren, O.	44.00	46.00
Weirton, W. Va.	44.00	46.00
Youngstown, O.	44.00	46.00

Differentials from Base

Differentials per gross ton for other grades of dealer and industrial scrap:

O-H and Blast Furnace Grades

2. No. 2 Heavy Melting	-$2.00
3. No. 1 Busheling	Base
4. No. 1 Bundles	Base
5. No. 2 Bundles	-3.00
6. Machine Shop Turnings	-10.00
7. Mixed Borings & Short Turnings	-6.00
8. Shoveling Turnings	-6.00
9. No. 2 Busheling	-4.00
10. Cast Iron Borings	-6.00

Elec. Furnace and Frdy. Grades

11. Billet, Bloom & Forge Crops	+7.50
12. Bar Crops & Plate	+5.00
13. Cast Steel	+5.00
14. Punchings & Plate Scrap	+2.50
15. Electric Furnace Bundles	+2.00
Cut Structurals & Plate:	
16. 3 feet and under	+3.00
17. 2 feet and under	+5.00
18. 1 foot and under	+6.00
19. Briquetted Cast Iron Borings	Base
Foundry, Steel:	
20. 2 feet and under	+2.00
21. 1 foot and under	+4.00
22. Springs and Crankshafts	-1.00
23. Alloy Free Turnings	-3.00
24. Heavy Turnings	-1.00

Special Grades

25. Briquetted Turnings	Base
26. No. 1 Chemical Borings	-3.00
27. No. 2 Chemical Borings	-4.00
28. Wrought Iron	10.00
29. Shafting	10.00

Restrictions on Use

(1) Prices for Grades 11 and 23 may be charged only when shipped to a consumer directly from an industrial producer; otherwise ceiling prices shall not exceed prices established for Grades 12 and 8, respectively.

(2) Prices established for Grades 26 and 27 may be charged only when sold for use for chemical or annealing purposes, and in the case of Grade 27, for briquetting and direct charge into an electric furnace; otherwise ceiling prices shall not exceed price established for Grade 10.

(3) Prices established for Grade 28 may be charged only when sold to a producer of wrought iron; otherwise ceiling price shall not exceed ceiling price for corresponding grade of basic open-hearth.

(4) Premiums for Grades 11-18, 20 and 21 may be charged only when sold for use in electric and open-hearth furnaces or foundries.

(5) Prices for Grade 29 may be charged only when sold for forging or rerolling purpose.

Special Pricing Provisions

(1) Sellers of Grades 26 and 27 may make an extra charge of $1.50 per ton for loading in box cars, or 75 cents per ton for covering gondola cars with a weather-resistant covering.

(2) Ceiling price of pit scrap, ladle scrap, salamander scrap, skulls, skimmings or scrap recovered from slag dumps and prepared to charging box size, shall be computed by deducting from the price of No. 1 heavy melting steel of dealer and industrial origin, the following amounts: Where iron content is 85% and over, $6; 75% and over, $10; less than 75%, $12.

(3) Ceiling price of any inferior grade of scrap not listed shall not exceed the price of No. 1 heavy melting steel less $15.

Differentials from Base

Differentials per gross ton above or below the price of Grade 1 (No. 1 railroad heavy melting steel) for other grades of railroad steel scrap.

2. No. 2 Heavy Melting Steel	-$2.00
3. No. 2 Steel Wheels	Base
4. Hollow Bored Axles and loco. axles with keyways between the wheelseats	Base
5. No. 1 Busheling	3.50
6. No. 1 Turnings	-3.00
7. No. 2 Turnings, Drillings & Borings	12.00
8. No. 2 Cast Steel and uncut wheelcenters	-6.00
9. Uncut Frogs, switches	Base
10. Flues, Tubes & Pipes	-8.00
11. Structural, Wrought Iron and/or steel, uncut	-6.00
12. Destroyed Steel Cars	8.00
13. No. 1 Sheet Scrap	-9.50
14. Scrap Rails, Random Lengths	+2.00
15. Rerolling Rails	+7.00
Cut Rails:	
16. 3 feet and under	+5.00
17. 2 feet and under	+6.00
18. 18 inches and under	+8.00
19. Cast Steel, No. 1	-3.00
20. Uncut Tires	+2.00
21. Cut Tires	+5.00
Bolsters & Side Frames:	
22. Uncut	Base
23. Cut	-3.00
24. Angle, Splice Bars & Tie Plates	+5.00
25. Solid Steel Axles	+12.00
26. Steel Wheels, No. 3 oversize	Base
27. Steel Wheels, No. 3	+5.00
28. Spring Steel	-5.00
29. Couplers & Knuckles	-5.00
30. Wrought Iron	-8.00
31. Fireboxes	-8.00
32. Boilers	-6.00
33. No. 2 Sheet Scrap	-13.00
34. Carsides, Doors, Car Ends, cut apart	-6.00

Restrictions on Use

(1) Price established for Grade 15 may be charged only when purchased and sold for rerolling uses; otherwise, ceiling shall not exceed that for Grade 14.

(2) Price established for Grade 30 may be charged only when sold to a producer of wrought iron; otherwise, ceiling shall not exceed that for No. 1 heavy melting steel.

(3) Price for Grade 25 may be charged only when sold for rerolling and forging purposes; otherwise ceiling shall not exceeed that for base grade (No. 1).

CAST IRON SCRAP

Ceiling price per gross ton for following grades shall be f.o.b. shipping point:

Cast Iron:	
1. No. 1 (Cupola)	$49.00
2. No. 2 (Charging Box)	47.00
3. No. 3 (Hvy. Breakable)	45.00
4. No. 4 (Burnt Cast)	41.00
5. Cast Iron Brake Shoes	41.00
6. Stove Plate	46.00
7. Clean Auto Cast	52.00
8. Unstripped Motor Blocks	43.00
9. Wheels, No. 1	47.00
10. Malleable	55.00
11. Drop Broken Machinery	52.00

Restrictions on Use

(1) Ceiling shipping point price which a basic open-hearth consumer may pay for No. 1 cast iron, clean auto cast, malleable or drop broken machinery cast shall be ceiling price for No. 3 cast iron.

(2) Ceiling shipping point price which any foundry other than a malleable iron producer may pay for Grade 10 shall be ceiling price for No. 1 cast iron.

Preparation Charges

Ceiling fees per gross ton which may be charged for intransit preparation of any grade of steel scrap of dealer or industrial origin authorized by OPS are:

(1) For preparing into Grades No. 1, No. 2 or No. 3, $8.
(2) For hydraulically compressing Grade No. 4, $6 per ton; Grade No. 5, $8.
(3) For crushing Grade No. 6, $3.
(4) For preparing into Grade No. 25, $6.
(5) For preparing into Grade No. 19, $6.
(6) For preparing into Grades No. 12, No. 13, No. 14, No. 16, or No. 20, $10.
(7) For preparing into Grade No. 17 or Grade No. 21, $11.
(8) For preparing into Grade No. 18 or Grade No. 20, $12.
(9) For hydraulically compressing Grade No. 15, $8.
(10) For preparing into Grade No. 28, $10.

Ceiling fees per gross ton which may be charged for intrasit preparation of any grade of steel scrap of railroad origin shall be:

(1) For preparing into Grade No. 1 and Grade No. 2, $8.
(2) For hydraulically compressing Grade No. 13, $6.
(3) For preparing into Grade No. 16, $4.
(4) For preparing into Grade No. 17, $5.
(5) For preparing into Grade No. 18, $7.
(6) For preparing into Grade No. 21, $4.
(7) For preparing into Grade No. 23, $4.

Ceiling fees per gross ton which may be charged for intransit preparation of cast iron are limited to:

(1) For preparing Grade No. 8 into grade No. 7, $9.
(2) For preparing Grade No. 3 into Grade No. 11, $7.
(3) For preparing Grade No. 3 into Grade No. 1, $4.

Whenever scrap has arrived at its point of delivery and consumer engages a dealer to prepare such scrap, no fee may be charged for such services unless consumer obtains prior written OPS approval.

Commissions

No commissions shall be payable to a broker in excess of $1.

Unprepared Scrap

For unprepared scrap, other than materials suitable for hydraulic compression, ceiling basing point prices shall be $8 per ton beneath ceiling of the prepared base grade.

For unprepared material which when compressed constitutes No. 1 bundles, ceiling basing point price shall be $6 per ton beneath ceiling for No. 1 bundles; or when compressed constitutes No. 2 bundles ceiling basing point price shall be $8 beneath ceiling basing point price for No. 2 bundles.

Premiums for Alloy Content

No premium may be charged for alloy content except: $1.25 per ton for each 0.25% of nickel where scrap contains not less than 1% and not over 5.25% nickel; $2 per ton for scrap containing not less than 0.15 per cent molybdenum and $3 for scrap containing not less than 0.65% molybdenum; for scrap containing not less than 10% manganese, $4 for scrap in sizes larger than 12 x 24 x 8 in., and $14 for scrap cut in that size or smaller (applicable only if scrap is sold for electric furnace uses or on NPA allocation); $1 for scrap conforming to SAE 52100.

Switching Charges

Switching charges to be deducted from basing point prices of dealer, industrial and nonoperating railroad scrap, to determine ceiling shipping point prices for scrap originating in basing points are per gross ton:

Alabama City, Ala., 43c; Ashland, Ky., 47c; Atlanta, 51c.
Bethlehem, Pa., 52c; Birmingham, 50c; Brackenridge, Pa., 53c; Buffalo, 83c; Butler, Pa., 65c.
Canton, O., 51c; Chicago (including Gary, Ind.), $1.34; Cincinnati (including Newport, Ky.), 65c; Claymont, Del. (including Chester, Pa.), 79c; Cleveland, 76c.
Coatesville, Pa., 50c; Conshohocken, Pa., 20c.
Detroit, 95c; Duluth, Minn., 50c.
Harrisburg, Pa., 51c; Houston, Tex., 57c.
Johnstown, Pa., 75c.
Kansas City, Mo., 78c; Kokomo, Ind., 51c.
Middletown, O., 26c; Midland, Pa., 75c; Minnequa, Colo., 33c; Monessen, Pa., 51c.
Phoenixville, Pa., 51c; Pittsburg, Calif., 65c; Pittsburgh (including Bessemer, Homestead, Duquesne, Munhall), 99c; Portland, Oreg., 52c; Portsmouth, O., 51c.
St. Louis (including Federal, Granite City, E. St. Louis, Madison, Ill.), 51c; San Francisco (including So. San Francisco, Niles, Oakland), 66c; Seattle, 59c; Sharon, Pa., 75c; Sparrows Point, Md., 20c; Steubenville, O., 51c.
Warren, Pa., 75c; Weirton, W. Va., 70c.
Youngstown, 75c.

HAMILTON, ONT.
(Delivered Prices)

Heavy Melt.	$35.00
No. 1 Bundles	35.00
No. 2 Bundles	34.00
Mechanical Bundles	33.00
Mixed Steel Scrap	31.00
Mixed Borings, Turnings	28.00
Rails, Remelting	35.00
Rails, Rerolling	38.00
Busheling	29.50
Bushlings new factory, prep'd	33.00
Bushelings new factory, unprep'd	28.00
Short Steel Turnings	28.00
Cast Iron Grades*	
No. 1 Machinery Cast	58.00-60.00

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* F.o.b. shipping point.

The Metal Market

RFC prepares to re-enter world tin market following drop in prices to $1.06. Foreign producers warn of possible curtailment in production at current levels

STABILIZATION of world tin markets close to present levels is expected. W. Stuart Symington, administrator, Reconstruction Finance Corp., Washington, said last week, when the price was cut to $1.06 a pound, that the situation is getting to a point where the United States could once again buy tin metal on foreign markets.

RFC withdrew from the market as a buyer on Mar. 6 in protest to what has been called "gouging" by foreign interests. The price had advanced to a high of $1.83 in mid-February at which time a Senate subcommittee said that this country should not buy tin from foreign producers when the price was more than $1.03 a pound.

RFC has made an offer to Bolivia which would give producers in that country a better return than they were getting before start of the Korean War. Bolivia has not acted on the new purchase contract but has protested against the dip in prices. The Republic of Indonesia declares the downward spiral of tin prices may seriously imperil the world's tin supply. The statement pointed out that "production cannot be continued at reduced prices, not only because it would be impossible to maintain operations at such a rate of return but also because labor unrest would set in . . ." Both countries deny they are members of any world tin cartel, or that any cartel in tin exists.

Lead Allocation Pends

Lead supply situation is not likely to improve in the near future. Complete allocation of pig lead is planned by NPA as a necessary step in filling defense and essential civilian production requirements. The government plans to allocate soft pig lead from primary producers to consumers; provide for monthly allocations based on consumption during a selected base period; adhere as much as possible to distributors' normal sales patterns.

Copper Scrap Price Order

Interests in the copper market were awaiting issuance of the red metal scrap price order last week. The order was expected to establish No. 1 heavy copper wire scrap at around 21.50c a pound; No. 2, 20.00c; and light copper, 19.00c. These would maintain the normal relationship to the 24.50c ceiling level for refined copper.

Such quotations would compare with a current price of around 30.00c for No. 1 copper, 28.00c for No. 2, and 27.00c for light copper scrap.

James T. Duffy Jr., president, Riverside Metal Co., Riverside, N. J., makes these recommendations: Increase production of copper ore by government subsidization of marginal high-cost mines; release a percentage of government stockpiled copper ore; do not raise prices to pay 3-cent Chilean differential (rather give government subsidy until ECA alerts its staff to its costly contribution to the copper price situation).

Britain Curbs Nickel Use

World supplies of nickel continue to tighten as defense needs mount. The use of nickel was prohibited in a wide range of industrial and domestic equipment in Great Britain, effective June 22. This follows cuts in supplies of the metal available for stainless steel production and nickel plating imposed in April.

Magnesium Demand Gains

Magnesium castings output continues to rise sharply. Wellman Bronze & Aluminum Co., Cleveland, plans to expand its output of this product for aircraft about 50 per cent at an estimated cost of $500,000. The company has leased a building at Broadway and Henry street, that city, and will equip it for production of small magnesium castings, scheduled to start about Aug. 15. The company's plant at 2525 E. 93rd St., Cleveland, is producing large magnesium castings, such as aircraft wheels, while the plant at 6017 Superior Ave. is engaged in production of aluminum, brass and bronze parts.

Shipments of magnesium and magnesium-base alloy castings by all foundries increased to 2,156,000 pounds in March compared with 1,907,000 pounds in February and only 903,000 pounds in March, 1950. The first quarter total was 5,903,000 pounds this year compared with 2,452,000 pounds in the like period a year ago.

Nickel Output To Rise

Canadian National Railways plans to build a 125-mile line in northern Manitoba to open up new nickel deposits. The new line will cost about $15 million, one-third of which will be advanced by the Canadian government.

The line will run from Sherridon to Lynn Lake and will aid Sherritt Gordon Mines Ltd., Toronto, Ont., in development of its nickel-copper property in the Lynn Lake area.

Ore Plant Officials Named

National Lead Co., named to operate a uranium ore plant under construction near Cincinnati, announced these appointments: George W. Wunder, general manager; Dr. Charles H. Moore, technical director; Malte Ericson, accounting chief; Samuel F. Audia, production supervisor; Peter DeFazio, plant engineer; Stephen A. Stoney, personnel director.

IDEA EXCHANGE: Discussing the gating on an aluminum permanent mold casting at Alumicast Corp., Chicago, are John G. Mezoff, second from right, of Alumicast; a British visitor, Charles Richard Lyons, second from left, of Imperial Smelting Corp., London; and Walter Bonsack, far left, of Alumicast. Mr. Lyons headed a team of 17 members of the British zinc and aluminum die casting industry making a productivity study in American plants under the auspices of the Anglo-American Council on Productivity and the Economic Cooperation Administration.

NONFERROUS METALS

(Cents per pound, carlots, except as otherwise noted)

Primary Metals

Copper: Electrolytic 24.50c, Conn. Valley; Lake 24.62½c, delivered.

Brass Ingots: 85-5-5-5 (No. 115) 29.00c; 88-10-2 (No. 215) 44.50c; 80-10-10 (No. 305) 35.00c; No. 1 yellow (No. 405) 25.50c.

Zinc: Prime western 17.50c; brass special 17.75c; intermediate 18.00c, East St. Louis; high grade 18.85c, delivered.

Lead: Common 16.80c; chemical 16.90c; corroding 16.90c, St. Louis.

Primary Aluminum: 99% plus, ingots 19.00c, pigs 18.00c. Base prices for 10,000 lb and over. Freight allowed on 500 lb or more but not in excess of rate applicable on 30,000 lb. c.l. orders.

Secondary Aluminum: Piston alloys 30.75-32.50c; No. 12 foundry alloy (No. 2 grade) 30.75-31.50c; steel deoxidizing grades, notch bars, granulated or shot: Grade 1, 32.75-33.50c; grade 2, 30.00-31.50c; grade 3, 30.00-30.50c; grade 4, 28.50-30.00c. Prices include freight at c.l. rate up to 75 cents per 100 lb.

Magnesium: Commercially pure (99.8%) standard ingots, 10,000 lb and over 24.50c, f.o.b. Freeport, Tex.

Tin: Grade A, prompt 106.00.

Antimony: American 99-99.8% and over but not meeting specifications below 42.00c; 99.8% and over (arsenic 0.05% max.; other impurities 0.1% max.) 42.50c; f.o.b. Laredo, Tex., for bulk shipments.

Nickel: Electrolytic cathodes, 99.9%, base sizes at refinery, unpacked, 56.50c; 25-lb pigs, 59.15c; "XX" nickel shot, 60.15c; "F" nickel shot or ingots, for addition to cast iron, 56.50c. Prices include import duty.

Mercury: Open market, spot, large lots, New York, $210-213 per 76-lb flask.

Beryllium-Copper: 3.75-4.25% Be, $1.56 per lb of alloy, f.o.b., Reading, Pa.

Cadmium: "Regular" straight or flat forms, $2.55 del., special or patented shapes $2.80.

Cobalt: 97-99%, $2.10 per lb for 500 lb (kegs); $2.12 per lb for 100 lb (case); $2.17 per lb under 100 lb.

Gold: U. S. Treasury, $35 per ounce.

Silver: Open market, New York 87.75c per oz.

Platinum: $90-93 per ounce from refineries.

Palladium: $24 per troy ounce.

Iridium: $200 per troy ounce.

Titanium (sponge form): $5 per pound.

Rolled, Drawn, Extruded Products

COPPER AND BRASS

(Base prices, cents per pound, f.o.b. mill; effective May 23, 1951)

Sheet: Copper 40.18; yellow brass 37.28; commercial bronze, 95% 40.18; 90% 39.78; red brass, 85% 38.86; 80% 38.47; best quality, 38.07; nickel silver, 18%, 50.99; phosphor-bronze grade A, 5%, 59.42.

Rod: Copper, hot-rolled 36.03; cold-drawn 37.28; yellow brass free cutting, 31.70; commercial bronze, 95%, 39.87; 90%, 39.47; red brass 85%, 38.55; 80%, 38.16.

Seamless Tubing: Copper 40.22; yellow brass 40.29; commercial bronze, 90%, 42.44; red brass, 85% 41.77.

Wire: Yellow brass 37.57; commercial bronze, 95%, 40.47; 90%, 40.07; red brass, 85%, 39.15; 80%, 38.76; best quality brass, 38.36.

Copper Wire: Bare, soft, f.o.b. eastern mills, c.l. 28.67-30.295; l.c.l. 29.17-30.92; 100,000 lb lots 28.545-30.295; weatherproof, f.o.b. eastern mills, c.l. 30.10, l.c.l. 30.18, 100,000 lb lots 29.35; magnet, del., 15,000 lb or more 34.50, l.c.l. 35.25.

ALUMINUM

(30,000 lb base; freight allowed on 500 lb or more, but not in excess of rate applicable on 30,000 lb c.l. orders)

Sheets and Circles: 2S and 3S mill finish c.l.

Thickness Range Inches	Widths or Diameters, In., Inc.	Flat Sheet Base*	Coiled Sheet Base	Coiled Sheet (Circle†) Base
0.249-0.136	12-48	30.1	...	...
0.135-0.096	12-48	30.6	...	...
0.095-0.077	12-48	31.2	29.1	33.2
0.076-0.061	12-48	31.8	29.3	33.4
0.060-0.048	12-48	32.1	29.5	33.7
0.047-0.038	12-48	32.5	29.8	34.0
0.037-0.030	12-48	32.9	30.2	34.6
0.029-0.024	12-48	33.4	30.5	35.0
0.023-0.019	12-36	34.0	31.1	35.7
0.018-0.017	12-36	34.7	31.7	36.6
0.016-0.015	12-36	35.5	32.4	37.6
0.014	12-24	36.5	33.3	38.9
0.013-0.012	12-24	37.4	34.0	39.7
0.011	12-24	38.4	35.0	41.2
0.010-0.0095	12-24	39.4	36.1	42.7
0.009-0.0085	12-24	40.6	37.2	44.4
0.008-0.0075	12-24	41.9	38.4	46.1
0.007	12-18	43.3	39.7	48.2
0.006	12-18	44.8	41.0	52.8

* Lengths 72 to 180 inches. † Miximum diameter, 26 inches.

Screw Machine Stock: 5000 lb and over.

Diam. (in.) or distance across flats	Round	Hexagonal	
	R317-T4, 17S-T4	R317-T4	17S-T4
0.125	52.0	....	....
0.156-0.188	44.0	....	....
0.219-0.313	41.5	....	....
0.375	40.0	46.0	48.0
0.406	40.0	....	....
0.438	40.0	46.0	48.0
0.469	40.0	....	....
0.500	40.0	46.0	48.0
0.531	40.0	....	....
0.563	40.0	....	45.0
0.594	40.0	....	....
0.625	40.0	43.5	45.0
0.688	40.0	....	45.0
0.750-1.000	39.0	41.0	42.5
1.063	39.0	....	41.0
1.125-1.500	37.5	39.5	41.0
1.563	37.0	....	....
1.625	36.5	....	39.5
1.688-2.000	36.5	....	....

LEAD

(Prices to jobbers, f.o.b. Buffalo, Cleveland, Pittsburgh) Sheets: Full rolls, 140 sq ft or more $22.00 per cwt; add 50c cwt 10 sq ft to 140 sq ft. Pipe: Full coils $22.00 per cwt. Traps and bends: List prices plus 60%.

ZINC

Sheets, 24.50c, f.o.b. mill 36,000 lb and over. Ribbon zinc in coils, 23.00c, f.o.b. mill, 36,000 lb and over. Plates, not over 12-in., 23.50-24.50c; over 12-in., 23.50-24.50c.

"A" NICKEL

(Base prices f.o.b. mill)

Sheets, cold-rolled, 77.00c. Strip, cold-rolled, 83.00c. Rods and shapes, 73.00c. Plates, 75.00c. Seamless tubes, 106.00c.

MONEL

(Base prices, f.o.b. mill)

Sheets, cold-rolled 60.50c. Strip, cold-rolled 63.50c. Rods and shapes, 58.50c. Plates, 59.50c. Seamless tubes, 93.50c. Shot and blocks, 53.50c.

MAGNESIUM

Extruded Rounds, 12 in. long, 1.31 in. in diameter, less than 25 lb, 55.00-62.00c; 25 to 99 lb, 45.00-52.00c; 100 lb to 5000 lb, 41.00c.

TITANIUM

(Prices per lb, 10,000 lb and over, f.o.b. mill) Sheets, $15; sheared mill plate, $12; strip, $15; wire, $10; forgings, $6; hot-rolled and forged bars, $6.

Plating Materials

Chromic Acid: 99.9% flake, f.o.b. Philadelphia, carloads, 27.00c; 5 tons and over 27.50c; 1 to 5 tons, 28.00c; less than 1 ton 28.50c.

Copper Anodes: Base 2000 to 5000 lb, f.o.b. shipping point, freight allowed: flat or trimmed 37.69c; oval 37.19c. Cast 37.375c, delivered in eastern territory.

Copper Cyanide: 70-71% Cu, 100-lb drums, 1000 lb 60.8c, under 1000 lb 62.8c, f.o.b. Niagara Falls, N. Y.

Sodium Cyanide: 96-98% ½-oz ball, in 200 lb drums, 1 to 900 lb, 19.00c; 1000 to 19,900 lb, 18.00c, f.o.b. Niagara Falls, N. Y. Packaged in 100 lb drums add ½-cent.

Copper Carbonate: 54-56% metallic Cu; 50 lb bags, up to 200 lb, 29.25c; over 200 lb 28.25c, f.o.b. Cleveland.

Nickel Anodes: Rolled oval, carbonized, carloads, 68.50c; 10,000 to 30,000 lb, 69.50c; 3000 to 10,000 lb, 70.50c, 500 to 3000 lb 71.50c, 100 to 500 lb, 73.50c; under 100 lb, 76.50c, f.o.b. Cleveland.

Nickel Chloride: 100-lb kegs, 35.00c; 400-lb bbl. 33.00c; up 10,000 lb, 32.50c; over 10,000 lb, f.o.b. Cleveland, freight allowed on barrels or 4 or more kegs.

Tin Anodes: Bar, 1000 lb and over, $1.39; 500 to 999 lb, $1.395; 200 to 499 lb, $1.40; less than 200 lb, $1.415. Freight allowed east of Mississippi and north of Ohio and Potomac

Sodium Stannate: 25 lb cans only, less than 100 lb, to consumers 89.40c; 100 or 600 lb drums only, 100 to 500 lb, 76.20c; 700 to 1900 lb, 73.90c; 2000 to 9900 lb, 72.30c. Freight allowed east of Mississippi and north of Ohio and Potomac rivers.

Zinc Cyanide: 100 lb drums, less than 10 drums 47.7c, 10 or more drums, 45.7c, f.o.b. Niagara Falls, N. Y.

Stannous Sulphate: 100 lb kegs or 400 lb bbl, less than 2000 lb $1.1500; more than 2000 lb $1.1309. Freight allowed east of Mississippi and north of Ohio and Potomac rivers.

Stannous Chloride (Anhydrous): In 400 lb bbl $1.0309; 100 lb kegs $1.0409. Freight allowed

Scrap Metals

BRASS MILL ALLOWANCES

Prices in cents per pound for less than 20,000 lb, f.o.b. shipping point.

	Clean Heavy	Rod Ends	Clean Turnings
Copper	23.00	23.00	22.25
Yellow Brass	20.125	19.875	18.75
Commercial Bronze			
95%	21.875	21.625	21.125
90%	21.75	21.50	21.00
Red Brass			
85%	21.50	21.25	20.75
80%	21.375	21.125	20.625
Muntz metal	19.00	18.75	18.25
Nickel, silver, 10%	22.25	22.00	11.125
Phos. bronze, A	24.00	23.75	22.75

BRASS INGOT MAKERS' BUYING PRICES

(Cents per lb, cl, delivered eastern refineries) No. 1 copper 30.00; No. 2 copper 28.00; light copper 27.00; composition red brass 25.50-26.00; radiators 20.50-21.00; heavy yellow brass 20.50-21.00.

REFINERS' BUYING PRICES

(Cents per lb, cl, delivered refinery) No. 1 copper 21.50*; No. 2 copper 20.00*; light copper 19.00*; refinery brass (60% copper) per dry copper content 20.00.

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* Nominal.

DEALERS' BUYING PRICES

(Cents per pound, New York, in ton lots)

Copper and brass: Heavy copper and wire, No. 1 25.50-26.50; No. 2 24.00-25.00; light copper 22.00-22.50; No. 1 composition red brass 22.00-23.00; No. 1 composition turnings 21.00-22.00; mixed brass turnings 13.00; new brass clippings 20.00-21.00; No. 1 brass rod turnings 19.00; light brass 15.00; clean heavy yellow brass 17.50; new brass rod ends 19.50; auto radiators 17.50-18.00; cocks and faucets, 19.00-19.50; brass pipe 20.00-20.50.

Lead: Heavy 16.50-16.75; battery plates 9.50-10.00; linotype and stereotype 17.00; electrotype 16.00-16.25; mixed babbitt 17.00.

Tin: No. 1 pewter 75.00-80.00; block tin pipe 105.00-110.00; No. 1 babbitt 65.00-70.00.

Aluminum: Clippings 2S 21.50-22.00; old sheets 17.00-17.50; crankcase 17.00-17.50; borings and turnings 13.00-14.00.

Zinc Scrap Ceiling Prices

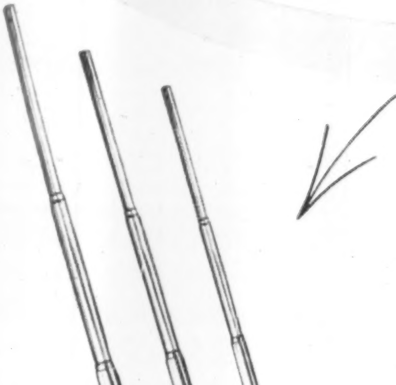
(Cents per pound, f.o.b. point of shipment) Unsweated zinc dross, 12.25c; new clippings and trimmings, 14.50; engravers' and lithographers' plates, 14.50; die cast slabs, min. 90% zinc, 12.25; old zinc scrap, 11.25c; forming and stamping dies, 11.25; new die cast scrap, 10.75; old zinc die cast radiator grills, 10.50; old die cast scrap, 9.50c.

DAILY PRICE RECORD

1951	Copper	Lead	Zinc	Tin	Aluminum	Antimony	Nickel	Silver
June 18-21	24.50	16.80	17.50	106.00	19.00	42.00	56.50	87.75
June 15-16	24.50	16.80	17.50	111.00	19.00	42.00	56.50	87.75
June 14	24.50	16.80	17.50	118.00	19.00	42.00	56.50	87.75
June 13	24.50	16.80	17.50	123.00	19.00	42.00	56.60	87.75
June 8-12	24.50	16.80	17.50	129.00	19.00	42.00	56.50	87.75
June 7	24.50	16.80	17.50	136.00	19.00	42.00	56.50	87.75
June 1-6	24.50	16.80	17.50	136.00	19.00	42.00	56.50	90.16
May Avg.	24.50	16.80	17.50	139.923	19.00	42.00	50.50	90.16
Apr. Avg.	24.50	16.80	17.50	145.735	19.00	42.00	50.50	90.16
Mar. Avg.	24.50	16.80	17.50	145.730	19.00	42.00	50.50	90.16
Feb. Avg.	24.50	16.80	17.50	182.716	19.00	42.00	50.50	90.16
Jan. Avg.	24.50	16.80	17.50	171.798	19.00	35.462	50.50	88.890

NOTE: Copper: Electrolytic, del. Conn. Valley; Lead, common grade, del. St. Louis; Zinc, prime west, E. St. Louis; Tin, Straits, del. New York; Aluminum primary ingots, 99%, del.; Antimony, bulk, f.o.b. Laredo, Tex.; Nickel, electrolytic cathodes, 99.9%, base sizes at refineery unpacked. Silver, open market, New York. Prices, cents per pound; except silver, cents per ounce.

39% LESS REJECTS now that they're made from *Carpenter* Stainless Tubing



When they first made collapsible handles for uranium detectors, inspectors rejected 40% of the finished units because of inaccurate slip-fits between sections. Costs went haywire and needed equipment could not be delivered on time.

Now handles, with perfect slip-fits between sections, are made from Type 304 Carpenter Stainless Tubing, at a reject rate of only 1%. Exceptional wall uniformity in various tube sizes makes possible mass production of a previously "fussy" job.

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Sheets, Strip . . .

Sheet and Strip Prices, Page 145 & 146

Cleveland—Confusion and uncertainty is noticeable among sheetmakers as the date approaches for the Controlled Materials Plan to go into effect, July 1. The mills will be very busy over coming weeks converting DO tonnage on books to the status of authorized controlled materials orders. This conversion will simplify and expedite handling of orders. To aid consumers to convert orders for September delivery, NPA postponed from July 1 to July 7, the date on which ACM orders will have preference over DO orders under CMP. Product limitations for acceptance of rated orders beyond which producers are not required to fill rated orders remains in effect with respect to August and September production. However, producers must recognize rated orders as meaning both DO orders and ACM orders.

PRICES UNCHANGED

For current quotations on ores and coke refer to page 164 this issue; on warehouse steel products and ferroalloys, page 157, June 18 issue; on pipe, boiler tubes, clad steels, fasteners, electrodes, stainless steels, coal chemicals, fluorspar and metal powders, page 155, June 18 issue; refractories, page 151, June 11 issue.

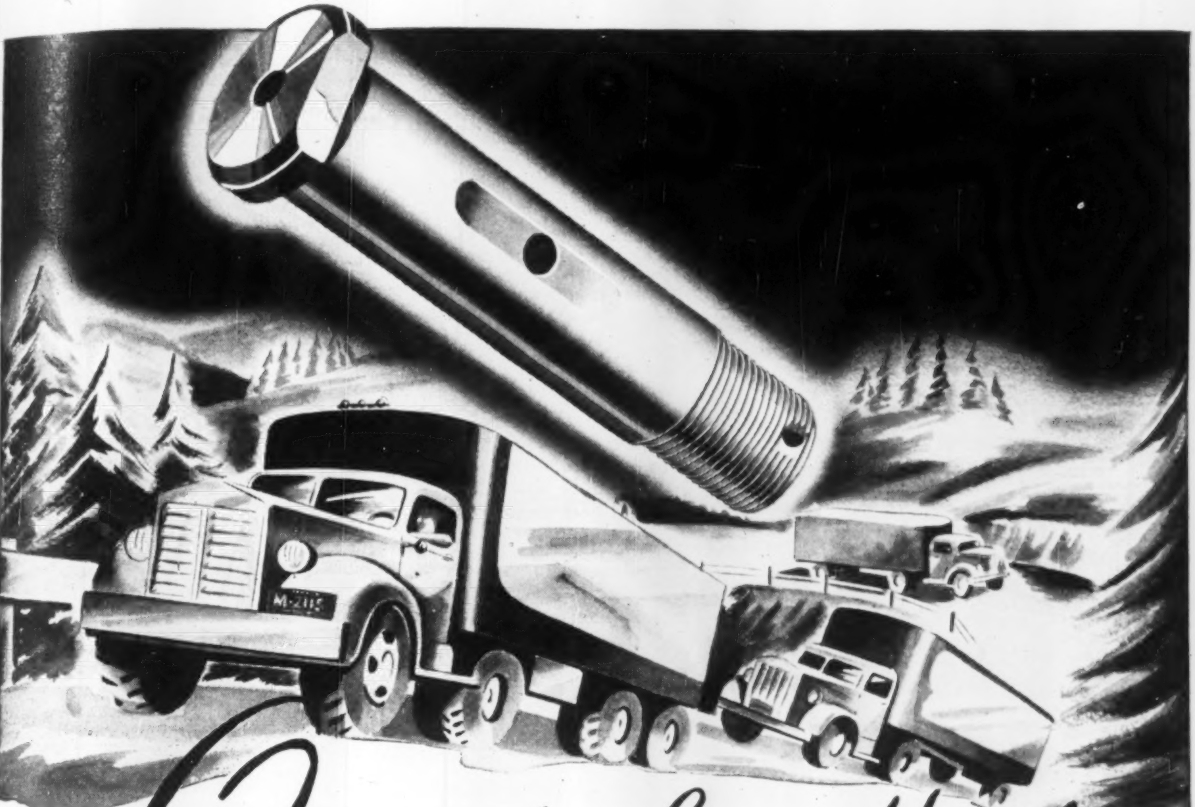
Boston—Under CMP converters of cold-rolled strip must report receipts during the preceding month and total inventory at end of each shipment month. Non-integrated mills must also name producers or mills supplying thin hot strip. If inventories are excessive, tonnage is to be indicated, starting July 15. Tack plate inventories, a hot-rolled sheet classification, are unbalanced or depleted. Tack makers want 25,000 tons to meet this year's requirements.

New York—While some additional cold-rolled and galvanized sheet tonnage under DO orders for third quarter has been taken, little hot-rolled volume is included. Most mills were booked at set-aside limits, including last increases. Beyond third quarter and pending developments in CMP, only direct military and atomic energy requirements are booked. Included are larger tonnages of heavy gage sheets for aircraft landing mats. Third quarter allotments to producers of "B" products will be out shortly for September.

Philadelphia—Restrictions on use of flat-rolled for some civilian goods in third quarter are largely offset by heavier volume of rated and directive orders. Indications are little progress will be made against carryovers which will lower shipments to unrated consumers.

Pittsburgh—Despite slackened demand for consumer durable goods, manufacturers anticipate greater sheet shortage in fourth quarter.

Chicago—For August a local sheetmaker will have about half as much tonnage of hot-rolled sheets available for unrated users as was shipped un-



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The bolt has maximum ground surface-wearing qualities. It is case hardened to proper depth, achieving a hard surface with a relatively soft core, assuring both long wear and high fatigue strength. The thread end is annealed to make it tough, but not brittle—more than equal to the required thread strength.

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Birmingham—With bulk of district sheet output going into defense consumption there is little hope for early supply improvement.

Steel Bars . . .

Bar Prices, Page 145

Washington—Allotments of cold-finished carbon bars to converters will increase beginning August. Steelmakers are instructed by NPA to boost from 90 to 100 per cent of base period shipments converters' allotments under an amendment to order M-1. In addition they must increase order board reserves from the August roll for the following carbon steel products to meet rated orders, being converted to authorized controlled materials under CMP: Hot-rolled carbon bars, 55 to 65 per cent; reinforcing bars, 55 to 65; and cold-finished carbon bars from 50 to 55 per cent.

Boston—Increased set-asides on carbon and alloy bars leaves a minimum of unrated tonnage open for third quarter distribution. Increased carbon bar allocation to converters, 100 per cent of base period, from 90 per cent, may help some unrated users. On the whole, converters are doing fairly well on supply of conversion tonnage. Demand for forgings bolsters bar demand; also textile mill equipment and bolts.

New York—Delay in approval of melt sheets for alloys, is holding back production schedules and reducing lead-time for considerable third quarter volume, including some in July. Checking on alloying elements substitutes are frequently recommended for certain uses.

Philadelphia—Cold-finished carbon bar converters have DO orders in excess of 100 per cent of the base period allocation and therefore may get less steel in third quarter. Bolt and rivet shops are likely to get more steel in the months ahead under CMP.

Pittsburgh—No relief on hot or cold rolled bars is expected in third quarter and a gradual tightening will press non-rated users harder. Cutbacks in automotive and consumer durable goods production will not ease supply in face of mounting defense requirements.

Cleveland—Merchant bar tonnage available to the general market continues to shrink with military and related demands increasing steadily. Producers are converting rated orders on books to Controlled Materials Plan status and it will be some weeks before the situation is sufficiently clear to permit of a sound appraisal of the supply outlook.

Chicago—A local barmaker will have no free tonnage of carbon bars in either July or August. This mill was already booked to 100 per cent of capacity with rated tonnage when NPA increased the minimum set-aside from 55 to 65 per cent.

Seattle—Rolling mills are operating at capacity. With six month backlogs, only emergency business is accepted. Holiday and vacations will cut output in July. Northwest Steel Rolling Mills, Inc., Seattle, will close two weeks beginning July 1.

Plates . . .

Plate Prices, Page 145

New York—Rated demand for low alloy, high tensile plates is relatively high. Subject to approval of melt sheets to conserve critical alloys, notably nickel, and ingot hot-topping capacity, producers are having difficulty in maintaining schedules. Combat tank program has been extended, reducing monthly allocations, but involving the same steel tonnage, which may be increased later.

Boston—Plate consumption in New England, estimated at 115,000 tons, 1950, is running in excess of that tonnage. Electric welded pipe, main lines exclusive of lead-ins, take better than 105,000 tons for natural gas. This heavy demand for electric welded pipe contributes heavily to the plate shortage on a national scale. Holyoke, Mass. pipe shop is at capacity with backlogs carrying well into the balance of this year, including an 8000-ton order for large diameter water mains, Queens, N. Y.

Philadelphia—Adding to heavy plate mill load is substantial tonnage for airfield fueling systems. Plate set-asides have been increased to 90 per cent with producers taking no new tonnage for fourth quarter except on directive. One small mill down since late May is resuming rolling. The 140-in. mill, however, is going down for repairs about July 1 for 10 days.

Pittsburgh—More light plate is being rolled on continuous mills but

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there is little left for the nonrated users. Directives and ratings take most of the light and heavy plate production. Armor plate takes a larger portion of rolling schedules.

Washington — Navy awarded contracts for construction of 102 barges for the Army Transportation Corps, at a cost of more than $2 million. The contracts are divided among the following: Kargard Boat & Engine Co., Marinette, Wis.; Jafra Inc., Miami, Fla.; Augusta Iron & Steel Works Inc., Augusta, Ga.; Gary Steel Products Corp., Richmond, Va.; Bushnell Steel Co., Jacksonville, Fla.; Central Steel Construction Corp., Buffalo; Bushnell-Lyons Iron Works, Tampa, Fla.; Northeastern Boiler Works, Green Bay, Wis.

Chicago—NPA upping of minimum set-asides on sheared and universal plates from 75 to 80 per cent effective with August to accommodate needs of the railroad tank car and maritime commission vessel programs results in one district producer's plate output for that month being completely absorbed.

Birmingham — Plate supply prospects are far from reassuring. DO orders are likely to be further increased over coming months.

Seattle—Scarcity of plates is handicapping small shop operations and no relief is in sight. It is difficult to place new orders, except under DO schedules. Albina Engine & Machine Works, Inc., Portland, has been awarded a Navy contract for six steel barges.

Reinforcing Bars . . .

Reinforcing Bar Prices, Page 145

Los Angeles—Fabricators' competition for western military construction jobs is keen. Average price for deformed bars in place is $9.50 per 100 lb, up $2 from last year's level.

Structural Shapes . . .

Structural Shape Prices, Page 145

Philadelphia — Lull in estimating new tonnage is punctuated by transition of fabricating shop backlogs to CMP for fourth quarter. Allotments are being sought for some unrated projects and substantial part of borderline work is expected to be assigned steel. Among inquiries for direct military needs are alert hangars at numerous airfields, also 2070 tons, expressway, bridges, Montgomery county, Pa., closing July 27.

Boston—Before transition to CMP in third quarter by the construction industry, overhauling of fabricating shop backlogs, extending over one year with some, is under way. Most work will go ahead. Ratings are assigned to additional bridge volume on books. Industrial and institutional tonnage booked in recent months appears safe, but subject to delay because of heavy pressure on structural mills to supply plain material on schedule. District shop backlogs are not as far extended, most within three months. Merrimac river bridge, Amesbury-Newburyport, Mass., 4250 tons, will be re-bid, substructure contract having been placed.

New York—Backlogs with structural fabricating shops, notably those most extended, will be combed for

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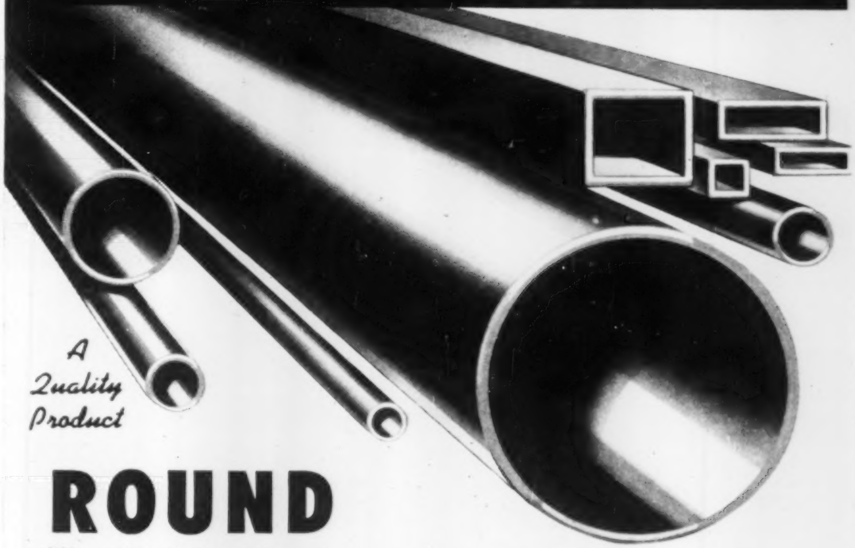

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1/2" to 2" 20 gauge, 1" to 2 3/4", 14, 16, 18 gauge
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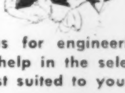

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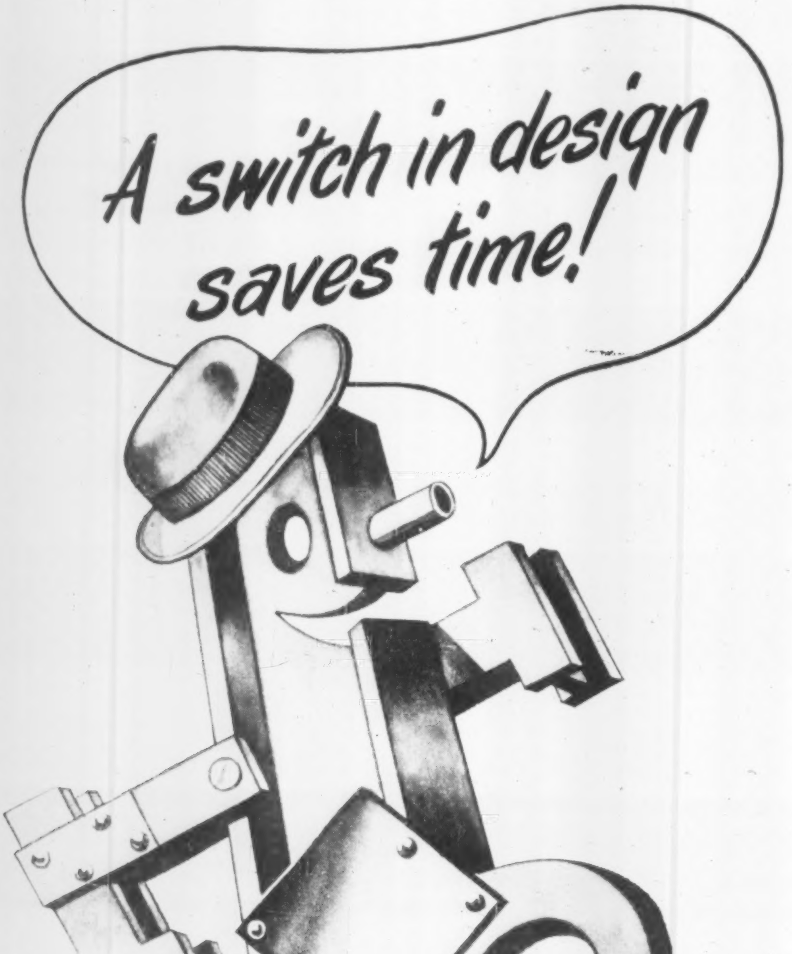
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establishment of ratings for considerable tonnage booked months back.

Pittsburgh—Fabricators consider no non-rated construction work. Supply of structurals has tightened considerably. Mills are booked through third quarter and production is earmarked for defense requirements and industrial expansion. Most rated construction work is slightly behind schedule.

Chicago—A producer of structural shapes in this district will have no tonnage available for unrated consumers in August.

Los Angeles—Gap between supply and demand for 3-15 in. channels, 3 x 3 in. heavy angles, and I-beams is widening. Despite uncertainties school building construction is spurting. Valuation of public school construction in southern California last month was $10.5 million, 60 per cent higher than in April.

Seattle — Fabricating plants are busy with sizable backlogs, some running to end of 1951. Tonnages for Alaska public works are being placed but as a rule 1952 delivery is specified.

Rails, Cars . . .

Track Material Prices, Page 147

Chicago—Upping of minimum set-asides in rails and track accessories from 10 to 90 per cent effective with August will effect no significant change in the distribution pattern.

Wire . . .

Wire Prices, Page 147

Boston—Tackmakers want 4000 tons and clothespin manufacturers 3000 tons of steel wire this year. They probably will come close on claim of essentiality. Until now wire has been in sufficient supply to hold production, although tightening. Production and consumption of these products is high in New England. During World War II, the clothespin industry was classed non-essential, production going entirely to wood. Last year 5,765,000 gross of wire clothespins were produced compared with 9,402,000 gross of wood pins.

New York—Rod shortages are affecting some finishing mill operations. Large contracts have been placed for welded wire fabric. There is no easing in pressure for valve spring wire. Rated orders are increasing for wire specialties.

Cleveland—The wire mills are under strong pressure for tonnage despite mandatory cutbacks in use in civilian durable goods lines of consumption. Indications are consumers will continue to take as much tonnage as they can even in those instances where manufacturing operations are expected to fall.

Iron Ore . . .

Iron Ore Prices, Page 164

Cleveland — Consumption of Lake Superior iron ore increased over 500,000 tons in May to 7,761,173 gross tons, second largest monthly total ever attained. It has been exceeded only by 7,765,174 tons in January, 1943. To meet emergency needs, furnace operators are delaying repairs as long as possible, and on

June 1 only 4 stacks were idle in the United States and 1 in Canada.

Despite the high consumption rate, stocks are being accumulated for winter use. Total on June 1 amounted to 19,771,719 tons, the first gain since the shipping season opened. A month ago stocks amounted to 15,071,767 tons and a year ago, 14,384,443 tons.

Shipments are maintained at an unusually high rate, aggregating 3,082,311 tons for the week ended June 18. This compares with 2,683,475 tons for the like 1950 week and brings the season's cumulative total to 26,495,775 tons compared with only 16,530,890 tons for the similar period a year ago.

Metallurgical Coke . . .

Metallurgical Coke Prices, Page 164

Pittsburgh — Production of oven coke is matched with demand but supplies are too scarce to build inventories. Beehive shipments to other consuming areas continue.

Pig Iron . . .

Pig Iron Prices, Page 144

Cleveland — Pressure on merchant pig iron sellers continues with demand exceeding output. However, rationing policy of sellers over past months has worked out so successfully only minor production interruptions have been experienced by local foundries. It has been definitely determined that pig iron will not be allocated by the government for third quarter, but fourth quarter policy in this regard remains to be decided upon.

Youngstown—Republic Steel Corp. has blown in its No. 1 blast furnace here, completing relining and installing high pressure blowing equipment in a record 47 days. Capacity is increased from 1120 tons to 1300 tons daily, but the stack will not hit full production until a new boiler house is completed this fall.

Boston—Foundries hold sub-normal inventories, but pig iron supply in New England is less acute than in other districts. Basic melters are more concerned with supply sources uncertain. There will be no allocations for third quarter.

New York—With few exceptions foundry consumers will get less iron over the next few weeks with merchant tonnage reduced by furnace shutdowns for repairs. High prices operate against new buying of foreign iron.

Buffalo—Increase in DO work is making further inroads on merchant iron supply for civilian production. Sellers report added tension as supplies are in arrears. The one idle stack in the area will resume operations soon, but another is scheduled for relining.

Philadelphia—With three merchant iron furnaces going down for repairs, supply has tightened, distribution being spread out over two months, instead of one.

Pittsburgh — Pig iron production continues at capacity but foundry and steel plant inventories are critically low. Cutbacks in certain manufacturing fields will not provide any loosening in the iron market.

A 1018

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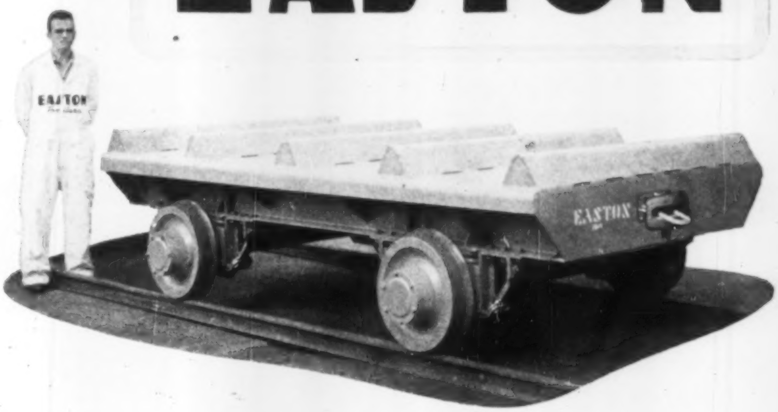

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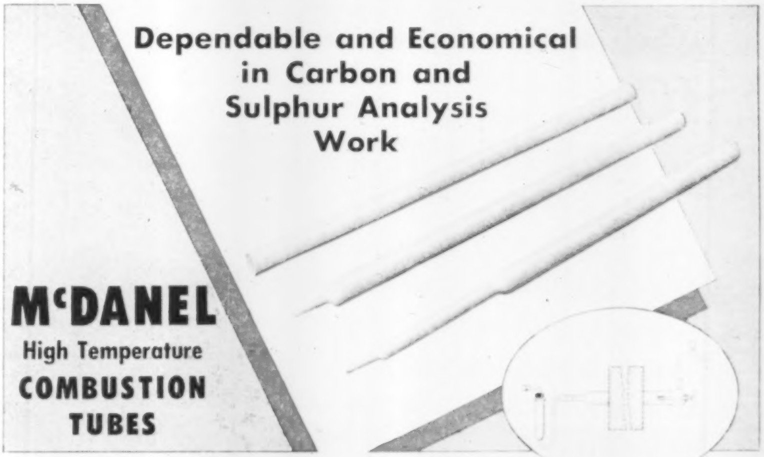

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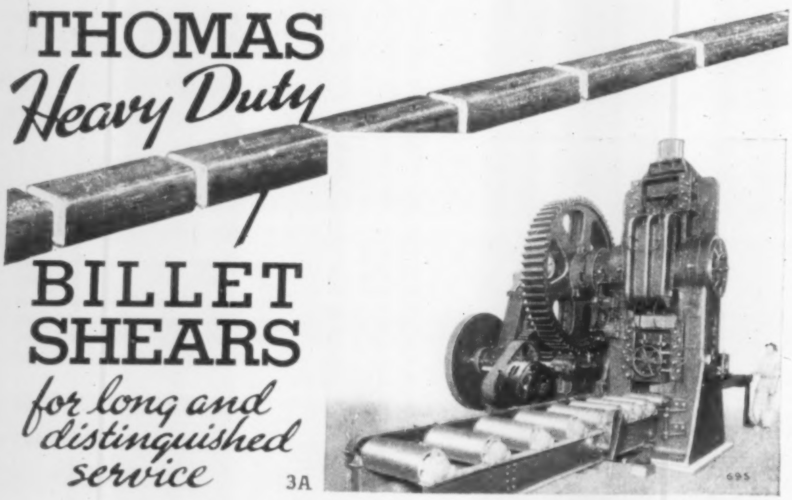

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Write for Bulletin 311

PUNCHES · SHEARS · PRESSES
BENDERS · SPACING TABLES

THOMAS
MACHINE MANUFACTURING COMPANY
PITTSBURGH, 23, PA.

Scrap . . .

Scrap Prices, Page 148

Chicago—Gary works of United States Steel Co. continues to operate on a 6-day scrap inventory. Intake last week came very close to matching consumption. No allocation has been received. Other mills in the district approach a critical shortage and before long allocations are expected to be general.

Detroit—Proposal to classify the two No. 2 grades with No. 1 open hearth items is regarded here as realistic. Some dealers think such a move would enable them to use facilities more efficiently, and would reduce segregation.

Philadelphia—Steel scrap yard shipments include high ratio of bundles. Yard shipments to consumers include little allocated tonnage, but parallel incoming collections which are disappointing in volume. Mill inventories are far below normal with most steelmakers on a hand-to-mouth basis. Cast grades are tight. No. 1 heavy melting commands $40.37 f.o.b. Philadelphia.

Boston—Not enough light scrap is coming into yards to maintain press operations at capacity. Volume of industrial material bypassing dealers is fairly substantial. Cast items are in better balance than steelmaking grades.

New York—Mill scrap reserves are low. All railroad scrap, and some dealer material is being allocated. Dealer tonnage is not sufficient to cover much heavier volume of allocations. Cast grades are slightly easier.

Buffalo—Moderate pickup is noted in collections. Mills, however, report receipts only sufficient to maintain capacity operations.

Pittsburgh—Alpha Steel Co. bid $16.03 per net ton for city incinerator scrap for last half 1951. For the past year this scrap has been taken by S. Hausman & Sons Co. at $2.05 per net ton. OPS recently issued a letter order placing a ceiling of $34 per gross ton on compressed tin cans.

Cincinnati — Scrap collections are slower, especially industrial tonnage. Allocations and long hauls are essential in maintaining high steelmaking rate. The foundry supply situation is easier.

St. Louis—Scrap volume continues to fall, with mills steadily losing ground stocks. More mills and foundries are obtaining allocations. Country scrap shipments are off sharply.

Birmingham—Moderate increase in receipts of agricultural scrap is reported. There is nothing in the situation, however, to indicate any general improvement in overall supply.

Los Angeles—With district scrap supplies under heavy pressure to meet emergency requirements from the Geneva, Utah plant of Geneva Steel Co., and with northern California scrap committed to ease shortages at the Seattle plant of Bethlehem Pacific Coast Steel Corp., the bottom of the barrel is being scraped by district dealers to find enough material for Columbia Steel Co.'s Pittsburg, Calif. plant.

San Francisco—The northern California scrap drive is under way. Coordinating the campaign is the San Francisco Chamber of Commerce. As an aid in the conduct of the drive a listing of scrap generating firms is in preparation.

Seattle — Large scrap buyers are worrying over lack of inventories for fall and winter. Collection drives, getting under way here, are beginning to show results in larger shipments from outlying areas in Montana, Idaho and eastern Washington. A cargo of 9000 tons of scrap from Guam and Sapan is scheduled to arrive here next month.

Cleveland—Slight improvement is noted in foundries' scrap position. Receipts of cast grades are heavier with freight charges averaging out at satisfactory level. Movement of steel scrap is slow with NPA allocating railroad material. Luria Bros. purchased about 850 tons of streetcar rails on St. Clair avenue, this city, from the Cleveland Transit System and will ship them on allocation in about 60 days to local foundries. The broker applied to the government for a ruling on the selling price, since unusual expenses are involved in salvaging the tonnage. Tearing up of the track will be done by Lipsett Inc., New York.

Warehouse . . .

Cleveland—Warehouses could do a larger volume of business were their stocks heavier. However, volume is substantial with tonnage moving into consumption almost as quickly as received from the mills. Some improvement in inventories is expected over coming months as mill shipments become more regular under the Controlled Materials Plan. Last week National Production Authority issued direction No. 1 to its order M-6, instructing steelmakers to continue providing carbon steel products to the warehouses on the basis of 85 per cent of average monthly shipments during the base period.

New York—Light buying and foreign steel competition during the earlier part of the allocation base period is reflected in light allotments on plates and structurals with numerous warehouses.

Philadelphia — Extension of rated orders on mills for alloy replacement, third quarter, is difficult. Most suppliers are filled to set-aside limits, including stainless.

Pittsburgh—Easing of demand for distributor products because of normal summer slow down will be minor.

Chicago — Warehouses report demand not quite as frantic as in recent months.

Seattle—No change in steel warehouse market conditions is noted. Strong demand continues with distributors' inventories low. Sheets, plates and stainless items are especially critical.

Canada . . .

Ottawa, Ont.—Defense Production Minister C. D. Howe, predicts a 30 per cent increase in Canada's steel production this year. Canada will produce about 3,250,000 tons of finished steel this year and import another 1,250,000 tons. Every steel plant in Canada has a substantial expansion program underway.

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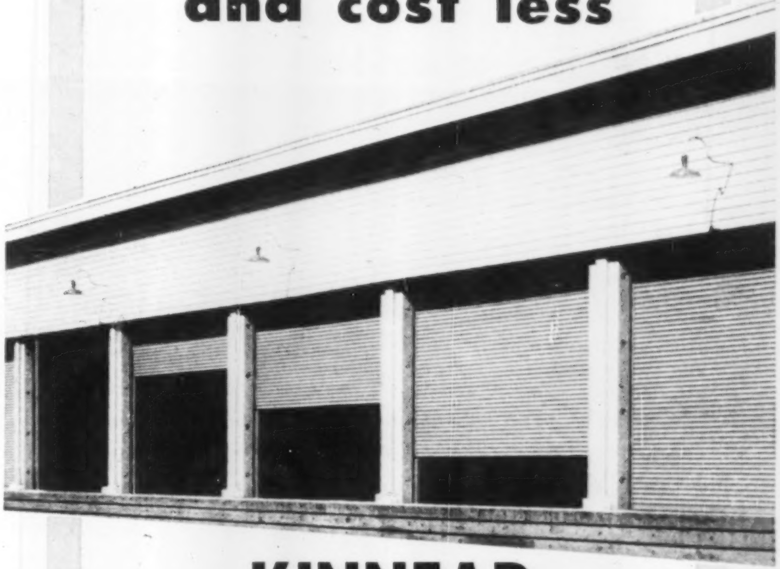

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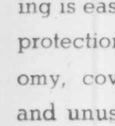

WRITE FOR BULLETIN

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STRUCTURAL SHAPES . . .

STRUCTURAL STEEL PLACED

7000 tons, including 2295 tons silicon steel, single and double deck elevated high superstructure, Charlestown section, Central Artery, Boston, to Harris Structural Steel Co., New York.

1500 tons, rolling mill building and plant expansion facilities, Carpenter Steel Co., Reading, Pa., to Belmont Iron Works, Philadelphia.

1000 tons, government warehouse, Elmendorf air field, Alaska, to Bethlehem Pacific Coast Steel Corp., Seattle; M. & B. Contracting Co., Anchorage, Alaska, general contractor.

800 tons, two Fort Richardson, Alaska, air field construction jobs for U. S. Engineer, to six Pacific Coast and mid-western fabricators; J. H. Pomeroy & Co., Seattle, general contractor.

800 tons, propulsion testing facilities, engineering experimental station, Annapolis, Md., to Reading Steel Products Co., Reading, Pa.; Cramer-Vollmerhausen Co., Washington, general contractor.

480 tons, catapult, naval air material center, Philadelphia, to Bethlehem Steel Co.; Hughes Foulkrod Co., Philadelphia, general contractor.

305 tons, Alaska railroad shops, Anchorage, Alaska, to Isaacson Iron Works, Seattle; also 70 tons, Robertson steel panels, to G. Donald Bradley, Seattle; J. B. Warrack Co., Seattle, general contractor.

STRUCTURAL STEEL PENDING

3000 tons, two-plate girder and two I-beam bridges, Lower Marion, Pa.; bids July 27, Harrisburg; also 4324 linear feet of steel beam piling.

2070 tons, bridges, expressway, Montgomery county, Pennsylvania; bids July 27, Harrisburg.

1430 tons, chain bridge, Potomac river, Canal road, Washington; bids July 6, director of highways, District of Columbia.

700 tons, heating and power plant, Whittier, Alaska; Haddock Engineers Ltd. and Wyatt & Kipper, Seattle, joint sole bid $5,527,000.

525 tons, alert hangars, Dover and New Castle, Del., and Pittsburgh; bids in.

300 tons, dormitory, hangar and facilities, Fort Dix, N. J.; bids in.

REINFORCING BARS . . .

REINFORCING BARS PLACED

1800 tons, reservoir, Ft. Randall, N. Dak., to Sheffield Steel Corp., Kansas City, Mo.

600 tons, hospital additions, University of Chicago, Chicago, to Ceco Steel Products Corp., Cicero, Ill.; J. W. Snyder Co., Chicago, contractor.

575 tons, machine shop, Budd Mfg. Co., Philadelphia, to Bethlehem Steel Co.; Wark & Co., Philadelphia, general contractor.

400 tons, Electro Metallurgical Co., Ashtabula, O., to United States Steel Supply Co., Chicago.

300 tons, propulsion testing facilities, engineering experimental station, Annapolis, Md., to Ceco Steel Products Co., New York; Cramer-Vollmerhausen Co., Washington, general contractor.

235 tons, O'Shaughnessy Liberal & Fine Arts Bldg., University of Notre Dame, South Bend, Ind.; McGough Bros., St. Paul, contractor.

210 tons, West Senior high school, Aurora, Ill., to Ceco Steel Products Corp., Cicero, Ill.; Arnold Lies Co., Aurora, Ill., contractor.

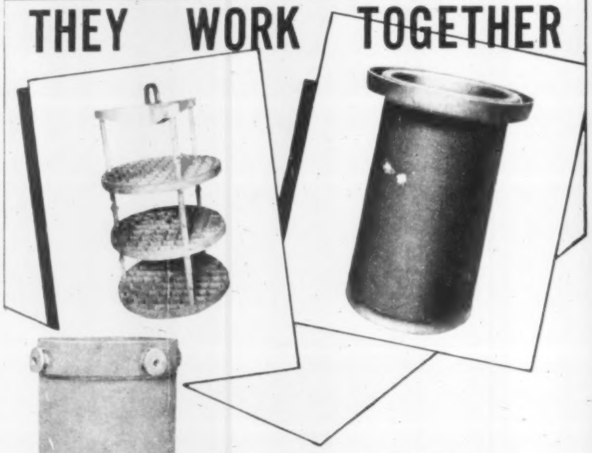
205 tons, foundations, hospital, Overbrook, Pa., to Bethlehem Steel Co.; Wark & Co., Philadelphia, general contractor.

150 tons, dormitories, mess hall and administration buildings, O'Hare Field, Chicago, to Truscon Steel Co., Youngstown; A. L. Jackson Co., Chicago, contractor.

135 tons, Elmendorf air field warehouse, Alaska, to Bethlehem Pacific Coast Steel Corp., Seattle.

130 tons, Atomic Energy plant, Paducah, Ky., to Ceco Steel Products Corp., Cicero, Ill.

THEY WORK TOGETHER



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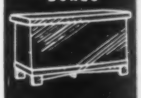
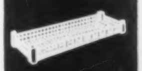


BASKETS

FIXTURES

TRAYS



RETORTS

Alphons Custodis Chimney Construction Co., Chicago, contractor.

113 tons, power plant, Joppa, Ill., to Ceco Steel Products Corp., Cicero, Ill.; Alphons Custodis Chimney Construction Co., Chicago, contractor.

100 tons, Sacred Heart school, Hubbard Woods, Ill., to Olney J. Dean Steel Co., Chicago; B-W Construction Co., Chicago, contractor.

100 tons, plus, telephone exchange, Fort Richardson, Alaska, and miscellaneous, to Bethlehem Pacific Coast Steel Corp., Seattle.

REINFORCING BARS PENDING

980 tons, state highway and bridges, Lower Marion, Pa.; bids July 27, Harrisburg.

900 tons, Lake Shore Briar apartments, Chicago; new bids June 27.

550 tons, auxiliary outlet sewers, contract 2-A, Chicago; bids June 22.

500 tons, building, Pioneer Paper Stock Co., Chicago.

500 tons or more, barracks and facilities, Spokane and Moses Lake, Wash. and Great Falls, Mont.; bids in to U. S. Engineer.

400 tons, Basic Refractories Inc., Maple Grove, O.

332 tons, library, Marquette University, Milwaukee.

209 tons, including 180 tons bars and 29 tons joists, resident units, Institute for Juvenile Research, State of Illinois, Chicago; bids in.

200 tons, high school residence hall, Marquette University, Milwaukee.

200 tons, high school addition, Ft. Atkinson, Wis.

158 tons, 66th St. school, Milwaukee.

150 tons, high school, Gary, Ind.

Unstated, factory and storage building, Crane Packing Co., Morton Grove, Ill.; E. L. Lonergan Construction Co., Chicago, contractor.

Unstated, building No. 330, Argonne National Laboratory, DuPage county, Illinois; bids June 26.

Unstated, addition to hospital, Champaign, Ill.; bids June 20.

Unstated, alert hangar and readiness building, O'Hare Field, Chicago; bids June 18.

Unstated, Parkview Memorial Hospital, Ft. Wayne, Ind.; bids July 3.

Unstated, new plant, Delco Remy Division, General Motors Corp., Anderson, Ind.; A. J. Glaser, Muncie, Ind., contractor.

Unstated, new NADO building, Great Lakes, Ill.; William E. Schweitzer Co., Evanston, Ill., contractor.

Unstated, plant and office building, Janette Mfg. Co., Morton Grove, Ill.; J. Emil Anderson & Son, Chicago, contractor.

PLATES . . .

PLATES PLACED

300 or more, six 110-foot barges for Navy; general contract to Albina Engine & Machine Works, Portland, Oreg.

PIPE . . .

STEEL PIPE PENDING

Unstated, 11,150 feet 6 and 4-inch, and alternatives; bids to Alderwood Water District No. 44, Alderwood Manor, Wash.

RAILS, CARS . . .

LOCOMOTIVES PLACED

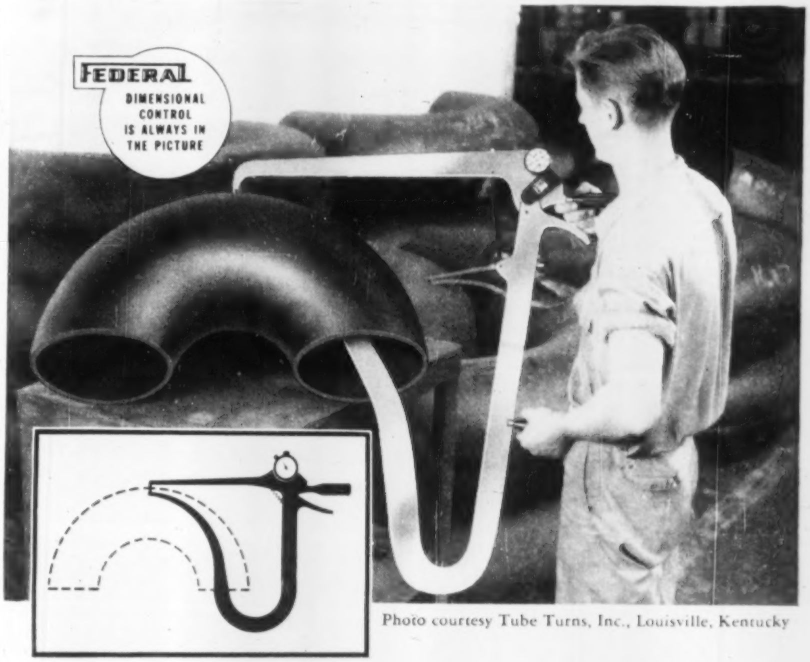
Baltimore & Ohio, 44 diesel-electric locomotives; eighteen 1500-hp type A freight units and nine 1500-hp type B freight units, to Electro-Motive Division, General Motors Corp., LaGrange, Ill.; two 1600-hp type A freight units and one 1600-hp type B freight unit, five 1600-hp road switchers, to Baldwin-Lima-Hamilton Corp., Eddystone, Pa.; six 1600-hp type A freight units and three 1600-hp type B freight units, to American Locomotive Co., New York.

LOCOMOTIVES PENDING

Texas & Pacific, six 1500-hp freight, six 1500-hp road-switching and eight 800-hp switching units.

RAILROAD CARS PENDING

Detroit, Toledo & Ironton, 100 seventy-ton covered hoppers.



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Old range bessemer	$8.70
Old range nonbessemer	8.55
Mesabi bessemer	8.45
Mesabi nonbessemer	8.30
High phosphorus	8.30

Eastern Local Ore

Cents per unit, del. E. Pa.

Foundry and basis 56-62% concentrates contract	17.00

Foreign Ore

Cents per unit, c.i.f. Atlantic ports

Swedish basic, 60 to 68%:	
Spot	17.00
Long-term contract	15.00
North African hematites	15.75
Brazilian iron ore, 68-69%	18.00

Tungsten Ore

Net ton unit, duty paid

Foreign wolframite and scheelite, per net ton unit	$65.00
Domestic scheelite, mines	65.00

Manganese Ore

Indian manganese, 46-48%, nearby, 92.00-96.00c per long ton unit, c.i.f. U. S. ports, duty for buyer's account; shipments against old contracts for 48% ore are being received from some sources at 79.8-81.8c.

Chrome Ore

Gross ton, f.o.b. cars, New York, Philadelphia, Baltimore, Charleston, S. C., plus ocean freight differential for delivery to Portland, Oreg., or Tacoma, Wash.

Indian and African	
48% 2.8:1	$32.50
48% 3:1	35.00-36.00
48% no ratio	26.00
South African Transvaal	
44% no ratio	$27.00-28.00
48% no ratio	34.00-35.00
Brazilian	
44% 2.5:1 lump	$32.00
Rhodesian	
45% no ratio	$20.00-21.00
48% no ratio	26.00
48% 3:1 lump	35.00-36.00
Domestic—rail nearest seller	
48% 3:1	$39.00

Molybdenum

Sulphide concentrates per lb, molybdenum content, mines	$1.00

METALLURGICAL COKE

Price per net ton

Beehive Ovens

Connellsville, furnace	$14.50-15.00
Connellsville, foundry	17.00-18.00
New River, foundry	21.30
Wise county, foundry	15.95
Wise county, furnace	15.20

Oven Foundry Coke

Kearney, N. J., ovens	$22.75
Everett, Mass., ovens	
New England, del.	*24.80
Chicago, ovens	23.00
Chicago, del.	24.40
Terre Haute, ovens	22.50
Milwaukee, ovens	23.75
Indianapolis, ovens	22.75
Chicago, del.	26.25
Cincinnati, del.	25.75
Detroit, del.	26.70
Ironton, O. ovens	22.50
Cincinnati, del.	25.12
Painesville, O., ovens	24.00
Cleveland, del.	25.75
Erie, Pa., ovens	23.50
Birmingham, ovens	20.30
Birmingham, del.	21.65
Philadelphia, ovens	22.70
Neville Island, Pa., ovens	23.00
Swedeland, Pa., ovens	22.60
St. Louis, ovens	
St. Louis, del.	25.40
Portsmouth, O., ovens	22.50
Cincinnati, del.	25.12
Detroit, ovens	24.00
Detroit, del.	25.00
Buffalo, del.	26.75
Flint, del.	26.45
Pontiac, del.	25.42
Saginaw, del.	26.81

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ABERDEEN, SOUTH DAKOTA

Metalworking Briefs . . .

CONSTRUCTION—ENTERPRISE—ORGANIZATIONAL CHANGES

Enlarges Johnson City Plant

General Electric Co., Schenectady, N. Y., is enlarging the government-owned plant in Johnson City, N. Y. The project will involve extensive rearrangement of machinery and other facilities within the present plant operations. The company is operating the plant for production under Air Force contracts.

Will Buy Machine Tools

American Machine & Foundry Co., New York, plans to spend $262,805 for machine tools for its Buffalo plant which has a multimillion dollar defense order backlog.

Prepares To Add War Work

Manufacture of automatic gun chargers will start soon at the Elmira, N. Y., plant of Remington Rand Inc., New York. The work will not affect normal production of office equipment at the plant.

Steel Fabricator Renamed

Brandt Iron Works, San Antonio, Tex., changed its name to Campbell Steel Co. President and general manager of the firm is R. Trent Campbell. The company fabricates structural and reinforcing steel.

Apollo Metal Buys Peerless

Apollo Metal Works acquired Peerless Polishing Co., both of Chicago. The Peerless plant on S. Morgan street specializes in grinding and polishing metal sheets and plates in all standard mill sizes to produce various custom finishes.

Reilly Machine Shop Expands

Reilly Machine Shop, 3 Jackson St., Albany, N. Y., took over additional manufacturing space at 118 Van Woert St., that city, because of increased defense work.

Offers Load-Binder Line

Effective July 1, all sales and distribution of the ratchet type load-binder manufactured by American Forge & Mfg. Co., Pittsburgh, will be handled on an exclusive basis by Canton Cast Products Co., Canton, O.

Daystrom Builds Coast Plant

Daystrom Furniture Corp., Fullerton, Calif., is building a plant in Anaheim, Calif. The company is a subsidiary of Daystrom Inc., Elizabeth, N. J., a leading producer of tubular chromed steel kitchen and dinette furniture. The company's Daystrom Instrument Division is building a $4 million plant in Scranton, Pa., to be devoted to the manufacture and assembly of fire control instruments for the Navy.

California Aluminum Corp.

California Aluminum Corp., Fresno, Calif., has started operations in its new plant in that city. The firm is engaged in manufacture of aluminum building materials.

Magnaflux Opens New Office

Magnaflux Corp., Chicago, opened its West Coast branch at 5148 Alcoa Ave., Los Angeles 58. Inspection service by contract is offered as well as equipment sales and service.

Erol Machine & Tool Co.

Erol Machine & Tool Co. Inc. was incorporated in Buffalo by Harriet M. Munter, Thomas Lippes and Gloria Carriero.

Plans $8 million Expansion

Barrett Division, Allied Chemical & Dye Corp., New York, plans to triple its capacity for producing synthetic phenol. The company applied for a certificate of necessity to cover construction of new facilities costing in excess of $8 million.

Adds Manufacturing Space

Erie Resistor Co., Erie, Pa., will make alterations to a plant building acquired several years ago from Erie Malleable Iron Co. The building will be converted from storage to production activity.

Two Rotary Kilns Ordered

Two rotary kilns will be built for Manganese Inc., Henderson, Nev., by Standard Steel Corp., Los Angeles. The kilns, involving about 400 tons of steel, will be installed as part of the $2.5 million manganese ore plant at the site of the old Three Kids mine near Henderson.

Great Lakes Carbon Expands

Construction has begun on 40 British-design coke ovens to be installed at the merchant coke plant of Great Lakes Carbon Corp. in St. Louis. The improvement will cost about $2.8 million and will enable the company to carbonize about 530 tons of coal daily for the manufacture of high-grade foundry

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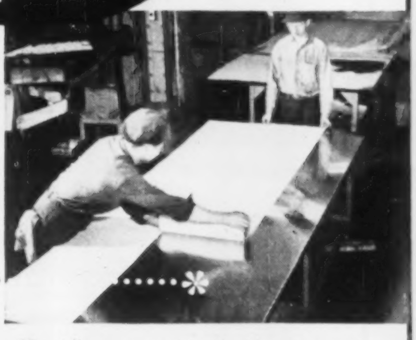

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coke. This will increase capacity of the plant by about 75 per cent. The ovens are an expansion of the plant purchased from Laclede Gas Co., St. Louis, in May, 1950, for $700,000. The original plant, consisting of a battery of 64 coke ovens, was constructed in 1915. The addition is scheduled for completion by the summer of 1952.

Acme Electric To Expand

Acme Electric Corp., Allegany, N. Y., plans a $165,000 expansion of its plant for the production of aircraft parts.

Pullman To Buy Trailmobile

Substantial agreement has been reached between Pullman Inc., Chicago, and Trailmobile Co., Cincinnati, on a basis for transfer to Pullman of practically all of Trailmobile's assets. Assuming that this transaction materializes, the truck trailer producer will be operated as a separate member of the Pullman group, with its present staff of officers and employees.

Publishes "Terne Topics"

Follansbee Steel Corp., Pittsburgh, published the second issue of "Terne Topics." This publication provides a medium for exchange of ideas, methods, etc., in the handling and application of terne metal roofing.

Utility Platers To Expand

Utility Platers Inc., Buffalo, is completing an expansion program which will result in doubled production capacity. An addition to its plant makes possible expansion of electroplating and metal finishing facilities.

Carboloy Appoints Agent

Carboloy Co. Inc., Detroit, appointed Peaslee - Wells Inc., West Springfield, Mass., as distributor of its standard carbide tipped cutting tools for western Massachusetts, eastern Vermont, and western New Hampshire.

Plans Machine Shop Addition

Massey-Harris Co., Racine, Wis., will erect a $2.5 million machine shop addition to its Toronto, Ont., plant. Steelwork is scheduled to be completed by early 1952.

Cleco Appoints Distributors

Cleco Division, Reed Roller Bit Co., Houston, appointed the following as distributors in their respective districts: Ridley Co., San Francisco; A. J. Baxter & Co., Detroit; Gesner Equipment Corp., New Haven, Conn.; Vogl Tool Co., Kansas City, Mo.; R. D. Price Associates, Springfield, Mass.; Keystone Builders Supply Co. Inc., Rochester, N. Y.; Pit & Quarry Equipment Co., Indianapolis; Hays Supply Co., Memphis, Tenn. Cleco manufactures air tools and accessories.

Sarco Moves Chicago Office

Chicago midwest headquarters for Sarco Co. Inc.'s sales representatives moved to 322 W. Randolph St., Chicago. This manufacturer of steam specialties has its main sales office in the Empire State Bldg., New York, and its factory at Bethlehem, Pa. George H. B. Burke is manager of the midwest headquarters.

GE To Install More Machines

Additional machinery will be installed in General Electric Co.'s plant in Westover, N. Y., of which only half of the manufacturing space is now in use.

Observes 65th Anniversary

Fernley & Fernley, Philadelphia, are observing the firm's 65th anniversary. The organization is the oldest secretarial office in the United States serving more than one industry association.

Eldorado Mining Builds Plant

Construction has started on a $1.8 million bleaching plant for Eldorado Mining & Refining Ltd. at Port Radium, Alberta, Canada. The plant is being built to extract uranium from mill tailings.

Trico Products Expands

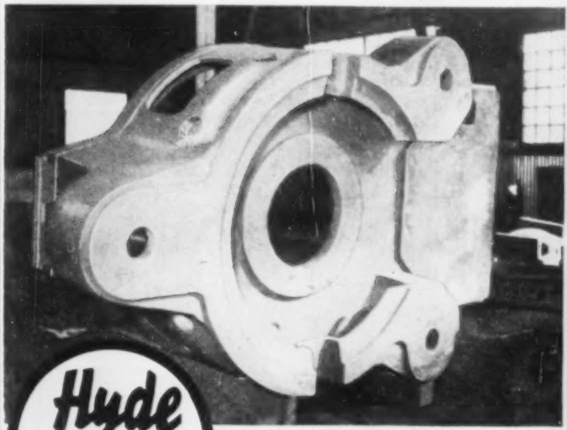
Trico Products Corp., Buffalo, is constructing an addition to its South Buffalo plant at a cost of $1 million. The project will raise manufacturing space in the firm's five Buffalo plants to 1,600,000 square feet.

Offers To Sell Palmer Mfg.

Oscar C. Palmer is offering for sale his Palmer Mfg. Corp., Phoenix, Ariz. The company produces heating, cooling, ventilating and humidifying equipment. The plant building has about 90,000 square feet of floor space.

Books $8 Million Order

Contracts totaling nearly $8 million for geared turbine units and electrical equipment to be installed on new high-speed merchant ships now under construction for the Federal Maritime Board have been received by Westinghouse Electric Corp., Pittsburgh. Equipment included in the contracts will be built at the Westinghouse Steam Division, Philadelphia; Transportation & Generator Division, East Pittsburgh, Pa.; Mo-



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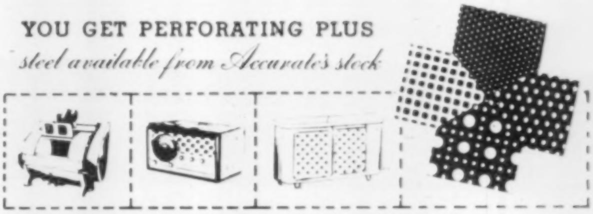

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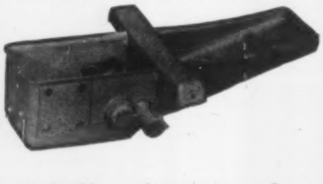

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tor Division, Buffalo; Transformer Division, Sharon, Pa., and at several Westinghouse manufacturing and repair plants convenient to the shipbuilding yards.

Canadian Arsenals Expands

Canadian Arsenals Ltd. plans an expansion program at Leaside, Ont., which will cost about $3.5 million. Initial cost of land, buildings and machinery taken over from Research Enterprises Ltd. was $2.5 million.

Plans Research Laboratory

Construction of a $600,000 research laboratory at Illinois Institute of Technology is expected to begin this month. The building will provide facilities for expanded engineering mechanics and metallurgical projects.

Berrien Springs Division

Yale & Towne Mfg. Co., New York, held the formal opening of its Berrien Springs Division Berrien Springs, Mich., where the company has consolidated the manufacture of its three non-Yale brands of locks and hardware products: Norton door closers and Sager and Barrows locks.

LONG HAUL: Laying of rails is done in a big way by the Elgin, Joliet and Eastern Railway of Joliet, Ill. Standard 39-foot lengths are joined in an automatic oxyacetylene pressure welding machine into 1600-foot rails. These are hauled out on flat cars as shown and laid just like regular rail. Then the long lengths are welded together by hand method to form one continuous rail nearly four miles long.

Norton Releases New Film

"Grits That Grind," a color motion picture on abrasives and grinding wheel manufacture, was released for immediate showing by Norton Co., Worcester, Mass. It portrays step by step manufacturing processes from mining bauxite in Arkansas to the finishing of grinding wheels in Worcester.

Portugal To Get Pipe Mills

Yoder Co., Cleveland, will build two complete electric resistance weld pipe mills for erection in Portugal, the first to be established in that country. Cost is estimated at $450,000. Accessory equipment for threading, galvanizing and other finishing operations is estimated to bring the total up to about $850,000.

Licensed to Make Ferrites

A license under a number of patents pertaining to magnetic ferrites and their manufacture was granted by Philips Laboratories Inc., Irvington-on-Hudson, N. Y., to General Ceramics & Steatite Corp., Keasbey, N. J. Suits which were pending for alleged patent infringement have been withdrawn.

Carrier To Build Warehouse

Carrier Corp., Syracuse, N. Y., will spend $1.2 million on construction of a warehouse east of its new plant in that city. It will provide 160,000 square feet of added space.

Standard Tool & Die Co.

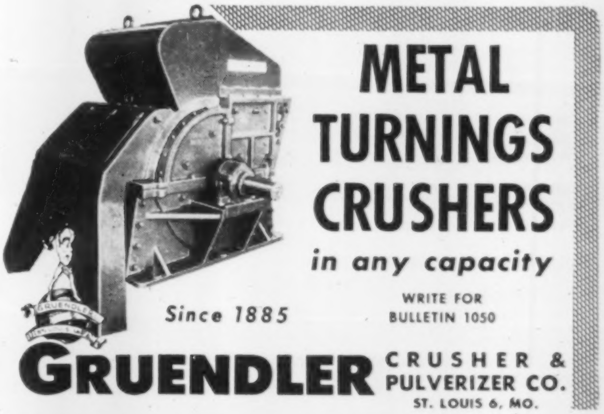
Standard Tool & Die Co., Los Angeles, is the new name of the partnership of Ben K. Brown, Nat Handel and Reginald E. King who were associated in Standard Tool & Die Inc., dissolved.

Opens Atlanta Office

Continental Tooling Service, Dayton, O., opened an Atlanta office at 353½ Luckie St. The office will provide specialists in product styling and design, particularly for the stove, heater and appliance fields.

Rockwell Buys Ohlen-Bishop

Rockwell Mfg. Co., Pittsburgh, purchased Ohlen-Bishop Mfg. Co., Columbus, O. The latter company manufactures mill and factory woodworking saws and saw blades; a trade line for carpenters, plumbers, electricians and butchers; and a complete line for home workshops.



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1—15 Tton AMERICAN HYDR. STR. PRESS 20″ Str. Late
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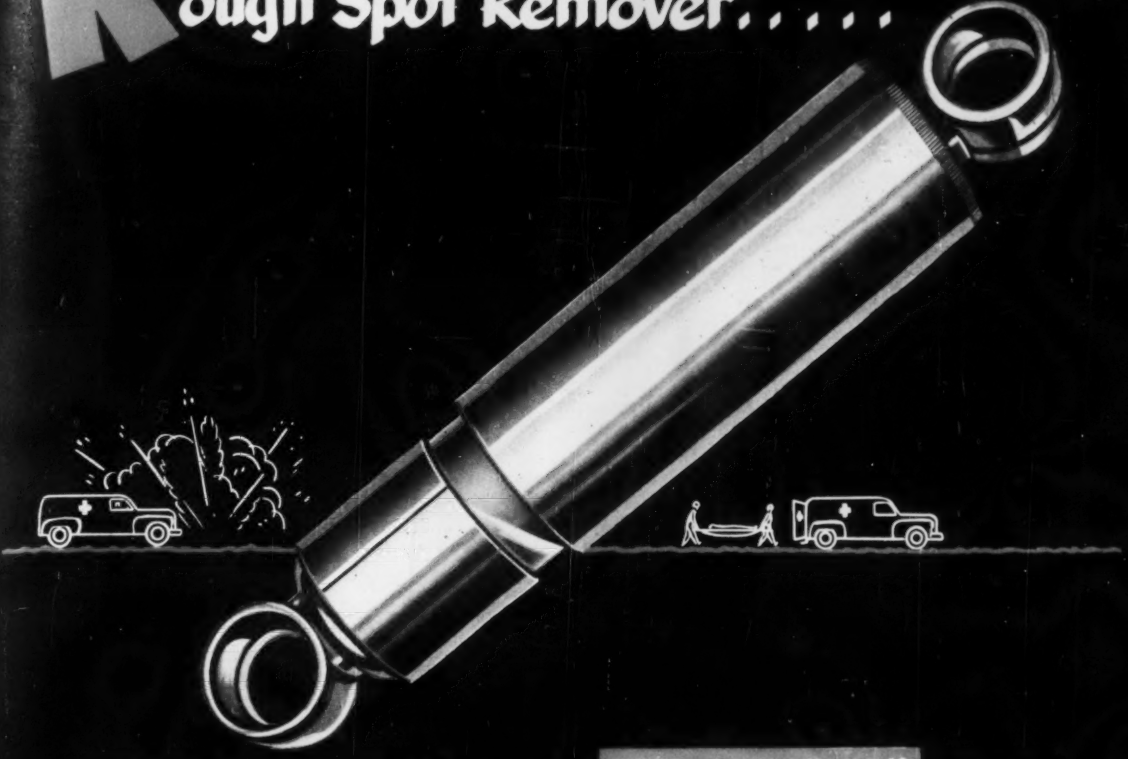

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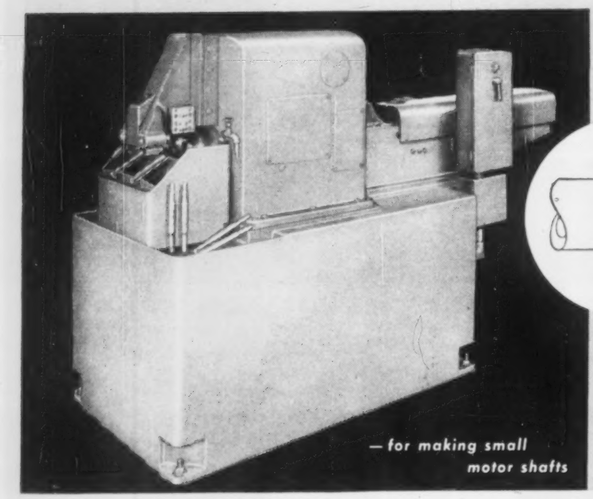
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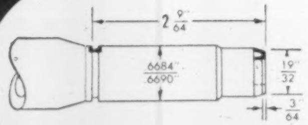

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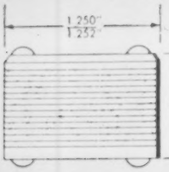

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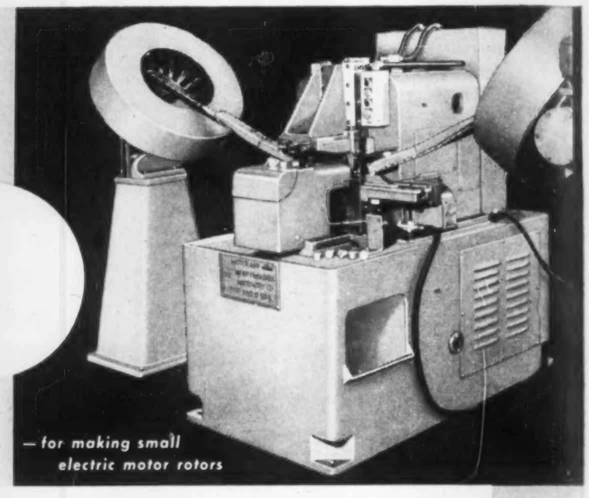
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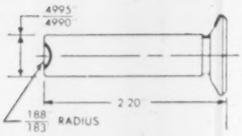

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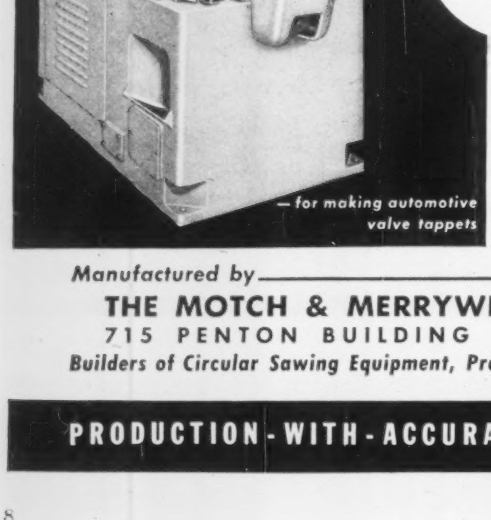
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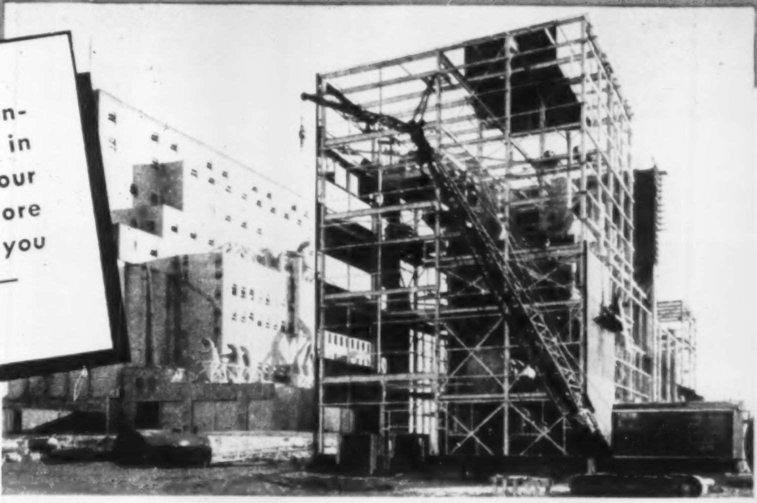

1... ADEQUATE STAFF?

Chemical Plants Division has over 550 engineers and experienced field supervisors. This organization is such that any project is handled with efficiency and dispatch—using the same care and cost-consciousness on small and large jobs, and employing the latest building methods and techniques.

2... RIGHT PROCEDURES?

Chemical Plants Division, through its own organization and that of many other Blaw-Knox Divisions has an international reputation for assuming all details—from site preparation, foundations, building erection, equipment design, equipment procurement and placing, to final testing. This is proved by many completed projects.

3... EFFICIENT PLANNING?

Every contract undertaken by Chemical Plants Division is planned to the nth degree, so that scheduled dates can be met or anticipated, and construction progress in the most orderly and economical manner—often before all engineering is completed.

4... facilities for a COMPLETE JOB?

Chemical Plants Division is equipped to handle any project in its entirety under a single responsibility. It has the necessary specialists and complete facilities required for all phases of construction work from initial plans to plant operation.

5... the necessary BACKGROUND?

The financial standing of Chemical Plants Division is unquestioned. It stands solidly behind any work it undertakes.

• • •

Regardless of the size or nature of your project, we of Chemical Plants Division are at your service, and welcome the application of the above "test" to our facilities, methods and personnel.

CHEMICAL PLANTS DIVISION

BLAW-KNOX CONSTRUCTION COMPANY

P. O. BOX 778, PITTSBURGH 22, PA.

Speeding Rivet Production

KEYSTONE
TUBULAR RIVET
Wire

According to production men, Keystone Tubular Rivet Wire has what it takes to increase production efficiency.

The special techniques and processing methods developed by Keystone have produced a tubular rivet wire with *exceptional* forming qualities for both extruded and drilled rivets.

The wire recommended for *drilled* tubular rivets has the proper hardness for longer drill life. The wire recommended for *extruded* rivets has uniform metal flow qualities required in extrusion headers. Both types have exactly the right ductility for cold heading and excellent roll crimping.

Regardless of the performance demanded in your products, consult Keystone for the wire to meet your most exacting specifications.

KEYSTONE
STEEL & WIRE CO.
SPECIAL ANALYSIS WIRE. SETTING NEW STANDARDS OF PERFORMANCE
PEORIA ILLINOIS

STEEL

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HOT *Lacquer* NEWS

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY IN THE INTERESTS OF BETTER FINISHES AND FINISHING

Douglas Cuts Finishing Time in Half By Using Hot-Spray Lacquer

New Process Adopted for Navy Aircraft Production at El Segundo, Calif.

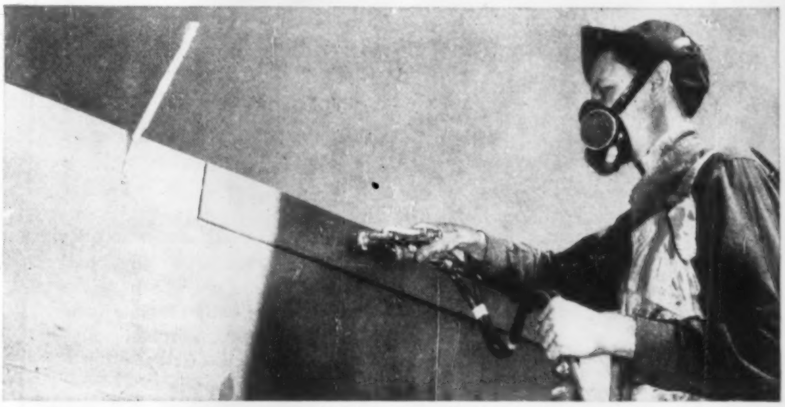
Douglas Aircraft Company (El Segundo Div.) has adopted hot-spray lacquer for finishing of many metal parts, including aluminum, at El Segundo plant. Use is growing steadily, because of savings such as these reported by their process engineers:

Time saving equivalent to 27½ hours in finishing AD-4 airplanes.

Booth time cut from 27½ hours to 18½ hours with present crews and equipment.

Equivalent of 2 gals. of lacquer and 8 gals. of thinner saved per plane.

Hot-spray method, with only one coat, removes hazard of sanding through the first coat of lacquer on rivet heads and skin laps.



Workman applies a single coat of hot-spray lacquer modified with special thinner for hot-spray application.

This AD-4, built by Douglas for the Navy, is one of hundreds on which hot-spray lacquer is used to cut finishing costs and time.

The conclusions which led Douglas to use hot-spray lacquer for Navy production, based on thorough tests, were:

1. Required film thickness can be applied by one hot cross coat where two cold cross coats are necessary.
2. Salt spray and weatherometer tests show the hot sprayed film to be superior.
3. Smoother and glossier appearance.
4. Eliminates sanding between coats.
5. Affords maximum uniform film thickness over rivets and seams, by elimination of scuff sanding. This, in turn, gives better protection in service.
6. Reduces application time 50% with a resultant increase in production.
7. Saves materials by less over-spray and less solvent required.
8. Has better flow-out; decreases tendency to sag, blush or orange peel.

FREE BOOKLET ON MILITARY LACQUER

Hercules offers a new booklet, "The Case for Lacquer in Military Procurement," which summarizes the progress made in lacquer since World War II. It is designed to help you evaluate modern nitrocellulose lacquers as a protective coating for military production. Send for your copy today.

HERCULES POWDER COMPANY
Cellulose Products Department
930 King Street, Wilmington, Delaware

CL51-7

HERCULES DOES NOT MANUFACTURE LACQUERS OR HOT LACQUER EQUIPMENT, ONLY THE INGREDIENTS FROM WHICH LACQUERS ARE MADE

WHEELABRATOR®
airless blast cleaning
IDEAS

.. to stem the tide of rising costs

There is no quicker or surer way to conserve manpower and cut the cost of finishing, cleaning and surface preparation than with a Wheelabrator. This versatile airless blast equipment performs these operations in a fraction of the time needed for other methods. It will help you stem the tide of rising costs, just as it has in the applications below:

REDUCED POROSITY FOR DIE CASTINGS

At the Johnson Motor Division, Waukegan, Illinois, two Wheelabrator machines returned their entire cost and made a 25% profit . . . in one year. In addition, at least 40% of the porous castings that would have been "leakers" now pass the water test; minor imperfections are removed which previously required hand buffing; polishing takes less labor time and paint adheres more firmly.

DEFLASHING PLASTIC MOLDED PARTS

A Wheelabrator now deflashes 50,000 parts per hour at Smith & Stone, Ltd., compared to only 1333 pieces formerly deflashed by manual methods in the same time. It has decreased the use of costly broaches and effected savings sufficient to pay for itself in less than a year.

The WHEELABRATOR Unit

WHEELABRATOR HAS UNLIMITED APPLICATIONS

For example: Removing flux and spatter from weldments; Surface preparation for galvanizing, plating, rubberizing, enameling, glass coating; Improving deep drawing operations; Etching steel mill rolls; Removing mica from molded rubber; Cleaning castings and forgings to improve subsequent machining operations.

WORLD'S LARGEST
BUILDERS OF
AIRLESS BLAST
EQUIPMENT

American
WHEELABRATOR & EQUIPMENT CORP.

AMERICAN WHEELABRATOR & EQUIPMENT CORP., 509 S. Byrkit St., Mishawaka 5, Ind.

LETTERS
TO THE EDITORS

Dry Lubricants: A New Use

Noting your item, "Powder Is good Lubricant," (STEEL, May 28, p. 75) we were especially interested in the following statement: " . . . . and used more recently in combination with metallic powders for pressed and sintered blades of turbine wheels in turbojet engines." This is, the first we have known molybdenum disulphide is being considered in this type application.

T. D. Parker
Climax Molybdenum Co.
New York

STEEL describes molybdenum disulphide as a dry lubricant. Please advise name of the producer who has recently published a booklet of excerpts from seven technical papers on this subject.

E. A. Basilio
General Railway Signal Co.
Rochester, N. Y.

• *The booklet noted by Mr. Basilio was published by Climax Molybdenum Co., 500 Fifth Ave., New York 18.*

Permission Granted

Hamilton Watch Co. is executing an engineering investigation contract for the U. S. armed services. In establishing a bibliograhy, we discovered an article, "Shells and Bomb Fuzes" (STEEL, June 2 and June 9, 1941). We wish to include this paper as a supplement to our final report and are asking permission to photostat completely and submit it, with full credit, as background information.

Ralph B. Metze
Assistant mechanical superintendent
Hamilton Watch Co.
Lancaster, Pa.

Probing New Sands

STEEL reports tests were made at the University of Washington on synthetic foundry sand made from crushed olivene rock (Apr. 2, p. 131). Where can we get more data and names of suppliers from whom we can obtain samples for our own tests.

S. L. Feduska, research director
Thomas & Skinner Steel Products Co.
Indianapolis

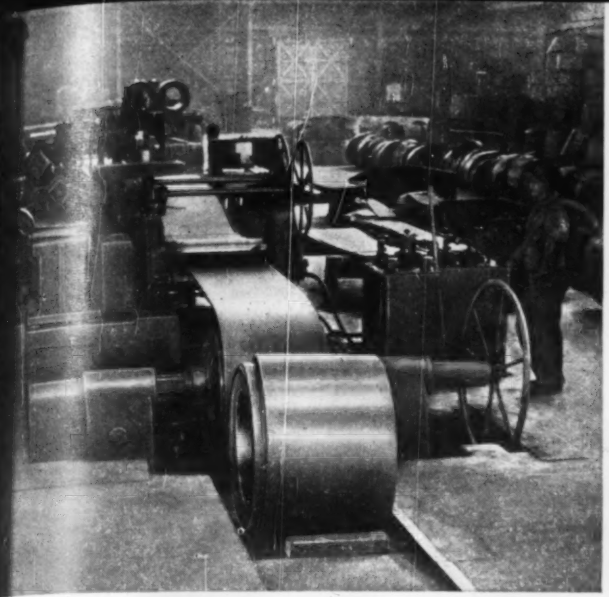
• *Experiments were conducted at University of Washington, Seattle. Contact Prof. Gilbert S. Schaller, Mechanical Engineering Department.*

How Much Chrome?

I am unable to obtain figures on use of ornamental chrome in this country by the electroplating industry. Can you suggest where this information may be found?

Harold H. Block, chief metallurgist
AiResearch Mfg. Co.
Los Angeles

• *Write to H. D. McLeese, vice president, United Chromium Inc., 1700 E. Nine-Mile Road, Ferndale 20, Mich.*



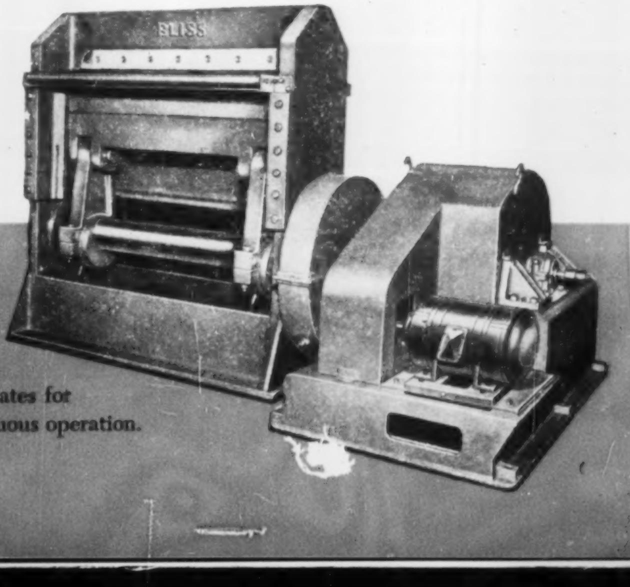
Transforms Coil to Sheet at Speeds up to 240 fpm

Bliss Shear Line at Alan Wood Steel Company Performs 9 Operations . . . from Feeding to Stacking

Converting coiled steel into uniformly flat sheet blanks—suitable for fabrication—is the job of this shear line, designed by Bliss for Alan Wood's 30-in. Hot Mill. Beginning at a coil stop, which delivers the coil to a cone pay-off, the coil is threaded to leveller, flattened, gauged to length, cut, oiled, fed and stacked. A transfer roller-table delivers piles of predetermined size ready for binding or banding to permit transfer to subsequent work station or shipment.

The Bliss shear line can be used in steel, brass or copper mills, warehouses or fabrication plants. Whether it's a jobbing shear line or an integrated steel plant, Bliss rolling mill engineers have the experience and facilities to take over the complete job. That's why Bliss rolling mill machinery is seen in almost every major metal-producing plant. You, too, will find it profitable to call on Bliss for mill equipment.

E. W. BLISS COMPANY, General Office: Canton, Ohio
ROLLING MILL DIVISION: SALEM, OHIO



UPCUT SHEAR has solid-slab, one-piece frame for maximum rigidity. Single adjustment of knife-head compensates for wear. "Turnover" speed: 60 spm. in continuous operation.

• • • • Pouring production! Production of all the things we need in our daily lives... and the things we require to preserve our freedom. The contribution of steel to our economy and our security is unmatched by any other industry.

Only with the help of the refractory industry could steel have achieved its fabulous progress. Only with the development of better and more diversified refractories and adequate production could steel deliver today's tonnage.

In the rapid growth of steel, General

Ladle of Liberty

GENERAL REFRACTORIES

GENERAL REFRACTORIES COMPANY
PHILADELPHIA

Refractories has played an important part. Wherever you go in the steel plant you'll find General products. Fireclay brick... silica brick... basic brick... including the famous STEELKLAD. You'll find, too, plastics and castables and bulk products of every description.

But General offers more than variety. It offers modern research facilities and production methods. It offers 43 mines, 29 plants, 18 sales offices and 200 distributing agencies, here and abroad. General really offers you a complete refractories service!

A Complete
Refractories Service

●

Drop Forgers:

your hammers last longer when they're made from forgings

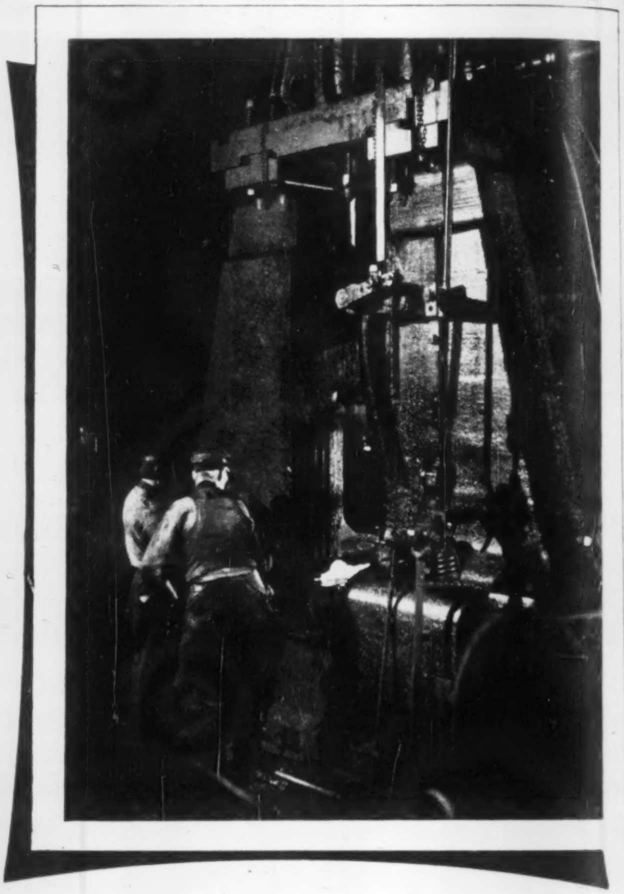
DROP FORGERS did a wonderful job during the last war—forging high alloy steels, light metals and intricate shapes.

But very few hammers were designed for that kind of punishment. Breakage was high. Today, replacement costs have hit an all-time high, yet you can expect your hammers to get even more abuse in the months ahead as our armament program increases.

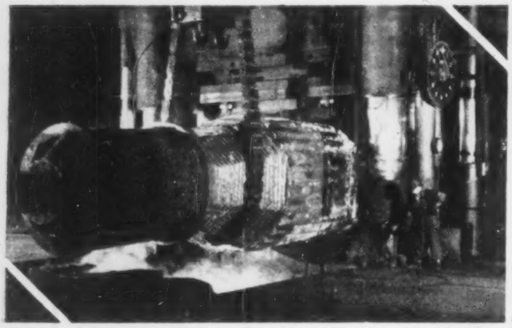
As a result, many drop forgers are building their hammers from the form of steel they *know* best, and *know* will stand up: they're using forgings.

Forgings are an obvious advancement over other types of hammer construction. Nothing can compare to forgings in ability to withstand the crushing blows of everyday drop forge work. You can use your forged hammers for the toughest jobs in the shop—and keep the hammers going round the clock. In the end, you can expect hammers made from forgings to cost you far less, for the job they do, than hammers of any other type of construction.

For more information, get in touch with your nearest United States Steel Company representative. Remember that our forged bases and columns are made in a wide range of sizes for board or steam hammers.



Here is the first hammer where both the anvil and columns were made from forgings to assure maximum shock resistance and long life. It's a 4,000-lb. hammer installed at the Coraopolis, Pa., plant of the Pittsburgh Forgings Company.



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TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

U·S·S HEAVY FORGINGS

1-971

UNITED STATES STEEL

Production Pointers from GISHOLT

TIME-SAVING IDEAS

Why Gisholt's Recommendations Are Unbiased. In helping you solve your turning problems, Gisholt engineers have no reason to favor one type of machine over another except on the basis of its ability to best serve your needs. For Gisholt manufactures both manually operated turret lathes and automatic lathes.

BOTH MACHINING AND SUPERFINISHING DONE ON ONE MACHINE

Production Stepped Up, Manpower Saved by Double Feature Machine

Here's the *first* time machining and Superfinishing have ever been combined in one chucking! There will be more of this sort of thing.

The two separate functions on cast-iron truck flywheels are combined on this standard Gisholt No. 12 Hydraulic Automatic Lathe with simple Superfinishing attachments.

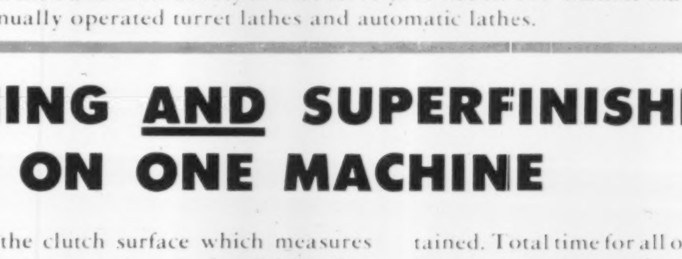
Here's a really smart tooling arrangement. The machining cycle is worked out so that the main front slide, as it moves to bore the rim, engages a plunger which actuates the headstock auxiliary slide to finish turn the back hub. The front slide then completes its cycle of facing the clutch surface.

How Superfinishing Takes Over

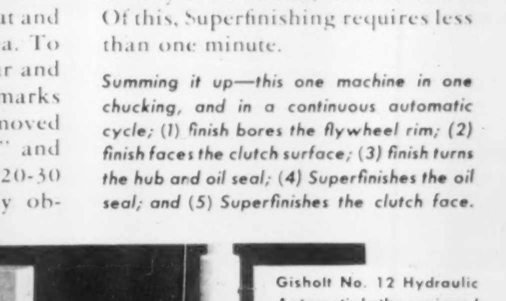
As the cutting tools clear the work, the two rear slides with Superfinishing attachments (instead of tools) move into position. A rear auxiliary slide mounted on the headstock carries a No. 1 size attachment for finishing the oil seal bearing on the hub. Superfinishing brings the surface from 150-200 micro-inches RMS down to 3 to 6 micro-inches RMS. Grinding operations are eliminated in getting this ultra-fine finish which leaves no roughness to abrade the packing and cause future oil leakage.

The main rear slide carries a No. 4 size attachment for Superfinishing the clutch surface which measures 150-200 micro-inches RMS after facing. This surface *must* be flat and smooth for good friction area. To protect against excessive wear and tear of the clutch plate, the marks left by turning are entirely removed so there is true "base metal" and the desired surface finish of 20-30 micro-inches RMS is readily obtained. Total time for all operations is only 5.8 minutes, floor to floor. Of this, Superfinishing requires less than one minute.

Summing it up—this one machine in one chucking, and in a continuous automatic cycle; (1) finish bores the flywheel rim; (2) finish faces the clutch surface; (3) finish turns the hub and oil seal; (4) Superfinishes the oil seal; and (5) Superfinishes the clutch face.



Gisholt No. 12 Hydraulic Automatic Lathe equipped for machining and Superfinishing flywheels to 24″.

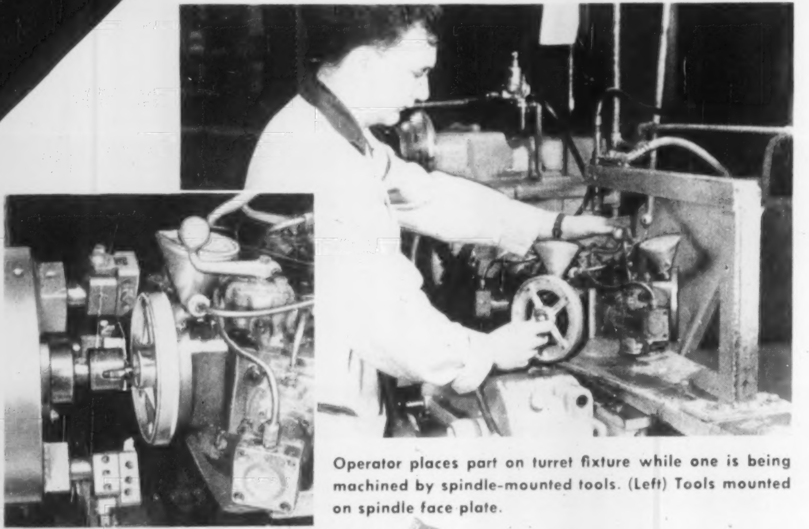


MACHINING OPERATIONS—As front slide (A) feeds in to bore rim, plunger starts slide (B) that finish turns the back hub. When front slide starts feeding inward, angle of contact cam allows plunger to return to original position.

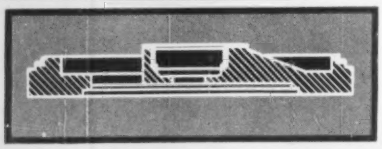
SUPERFINISHING OPERATIONS—Rear slide (C) holds a No. 1 Superfinishing attachment for finishing oil seal bearing. Slide (D) with No. 4 attachment finishes clutch plate face. The abrasive stones scrub away the amorphous metal to produce desired finish.

FOR MORE PRODUCTION FR M

TURN-ABOUT IDEA DOUBLES PRODUCTION



Operator places part on turret fixture while one is being machined by spindle-mounted tools. (Left) Tools mounted on spindle face plate.



Heavy lines show surfaces machined in this novel reverse setup.

Look at this tool setup again. That's right, they've reversed the usual procedure in machining aluminum die cast end frames. Tools are *on the spindle*—work is on the turret faces. Credit for the idea and tooling goes to Mr. H. L. Stephenson of the A. O. Smith Corporation (formerly Whirl-A-Way Motors, Inc.), Tipp City, Ohio.

The job is on a Gisholt No. 4 Ram Type Turret Lathe. Adjustable tools are mounted on a face plate on the spindle. Carrying out the reverse play—three separate holding fixtures for the workpiece are mounted on alternate faces of the turret. The parts are held rigidly on the fixtures by an air-operated bar and a C-washer.

Think of the advantages! The spindle runs continuously with no lost time for starting, stopping, chucking and unloading.

Production goes as high as 1000 pieces per 8-hour shift—a real tribute to smart planning and a fast turret lathe. Moreover, there's real accuracy, too: tolerance in the bore is consistently held to ± 0.0001.

With the parts on the turret and tools on the spindle, machining is continuous except for the brief time needed for indexing new part into position.

A GOOD SETUP FOR THIS DIFFICULT CYLINDER LINER JOB!

Careful Planning Simplifies Machining Problems on Big Parts

This smart setup on a standard Gisholt 5L Saddle Type Turret Lathe licked a lot of problems for a manufacturer of diesel engines.

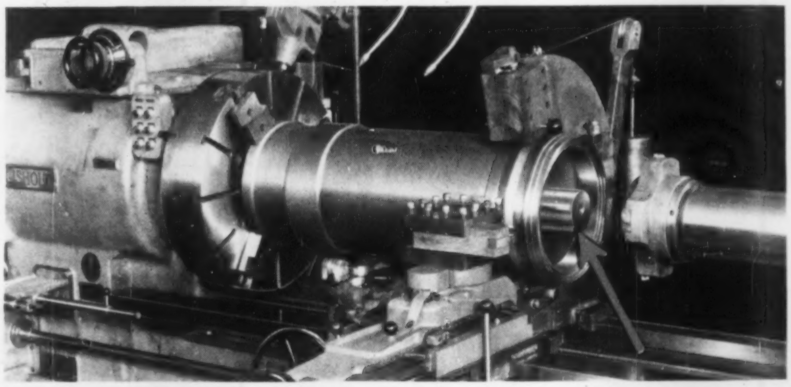
A 15″ 3-jaw scroll chuck is mounted on one face of the hexagon turret to center and support the big, heavy liners during preliminary machining of the diameter which later takes the steadyrest. Adjacent surfaces, best handled before the steadyrest is applied, are also machined then.

Novel Boring Bar Arrangement

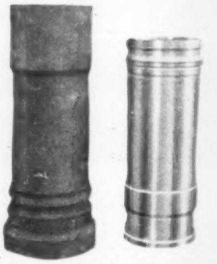
Note the arrangement for piloting the multiple cutter boring head. The big pilot bar is hydraulically advanced, thereby providing excellent support for the boring head. Also, because it can be retracted within the spindle, it does not interfere with loading and unloading—making it possible to do this job on a machine of standard bed length.

Now, look at the steadyrest. It's supported on the rear way and carrier of the bed—leaving the front way unobstructed so the square turret can work anywhere. Thus, other machining can be done while the long bore is being finished.

Using a chuck on 1 face of the hexagon turret . . . retractable pilot bar . . . and steadyrest help permit other machining operations to be done while boring—all help make this job simpler, faster.



An unusual setup on a Saddle Type Lathe for machining diesel engine cylinder liners. Arrow shows pilot bar which not only supports boring head but retracts back into spindle for loading and unloading.

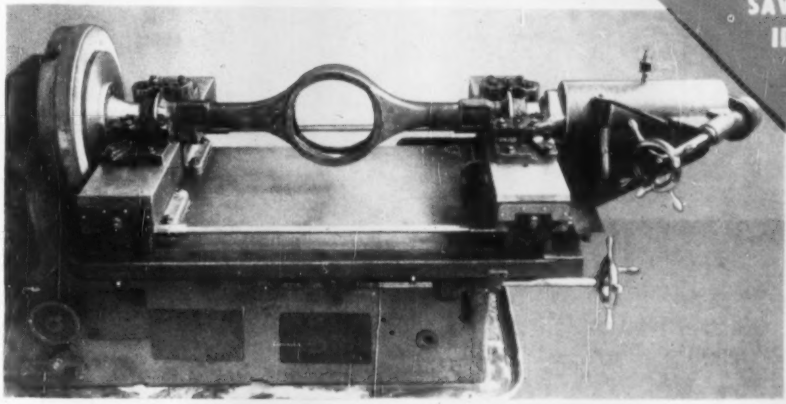


Liners—rough and after machining on 5L Saddle Type Turret Lathe.

TIME-SAVING IDEAS

BOTH ENDS OF AXLE HOUSINGS FINISHED AT SAME TIME ON SIMPLIMATIC

A Simple Way to Big Savings



Simplimatic setup for machining both ends of axle housing at one time.

Both ends of these truck axle housings are rough and finish turned at the same time by a Simplimatic Automatic Lathe. The machine is standard except for the tailstock and a longer table. All tools are standard.

Driving is done by an internal chucking device, having 3 separate eccentric rollers, each mating with a common gear so the three operate simultaneously to centralize the piece. There's an expanding chuck in the tailstock for centering and carrying the outer end of the housing.

Both flanges are faced on both sides and turned, and the housing ends are faced and formed on both sides of the lugs. Four slides with four groups of tools all working together take care of all rough and finish machining.

The Simplimatic proves its adaptability on this job by rough and finish turning both ends of part at same time.

AUTOMATIC RECESS BORING ATTACHMENT FOR CLUTCH SLEEVES

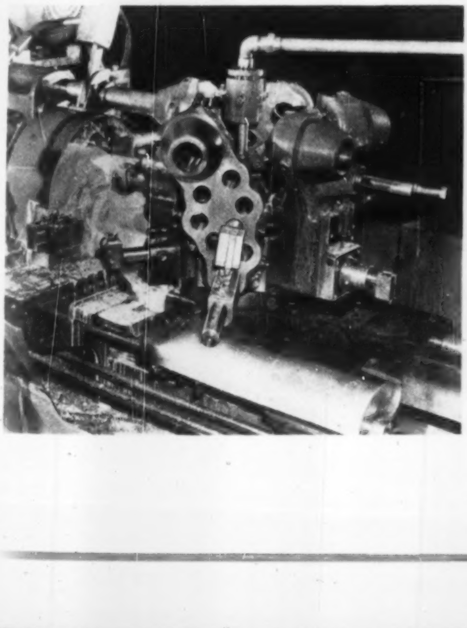
1 Turret Lathe Takes Over Work of 2

Here's how a Fastermatic Automatic Turret Lathe, equipped with a standard recess boring tool, was able to eliminate subsequent operations on a second machine.

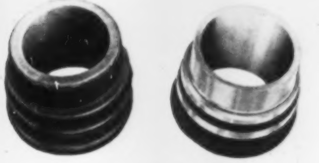
On this clutch sleeve, machined from a steel casting, the manufacturer was using two machines to perform the two operations required to finish the bored diameters. A Fastermatic finished the bore, and another lathe then did the recess boring.

A Standard Automatic Recess Boring Tool was recommended for the Fastermatic—and the job was then handled on this one lathe. Floor-to-floor time was reduced to 8 minutes, 20 seconds, and a second machine and operator are freed for other work. In addition, more concentric diameters are achieved by boring both on the same chucking.

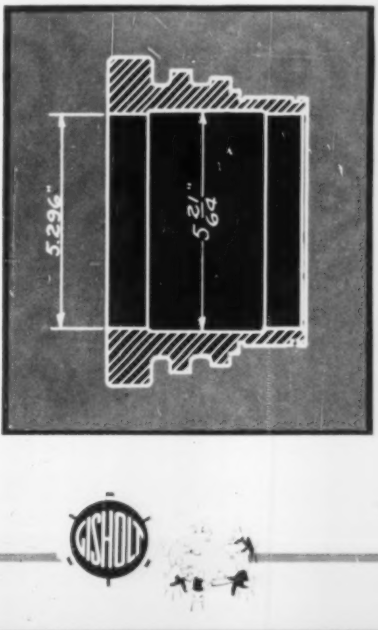
Simply by using a Standard Boring Attachment on his Fastermatic Lathe this manufacturer was able to save an extra machine and operator.



This Fastermatic with standard boring tool does job formerly requiring two lathes.



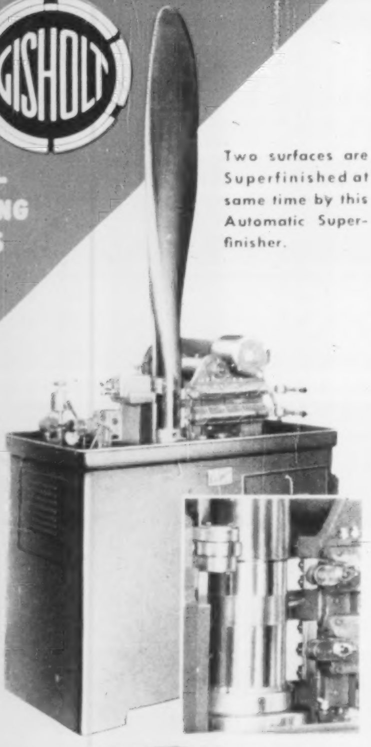
Rough casting as it goes to the Fastermatic and the semi-finished clutch sleeve.



Drawing shows 5-21/64" recess handled by Fastermatic automatic recess boring attachment.

TIME-SAVING IDEAS

HOW SUPERFINISHING SOLVES 2 PROBLEMS AT ONCE



Two surfaces are Superfinished at same time by this Automatic Superfinisher.

Close-up shows two sets of Superfinishing stones to handle both oil seal and bearing fit diameters.

Assures Oil Seal and Protects Bearing Fit on Variable Pitch Airplane Propellers

Imagine the problems in keeping oil-tight seals on an adjustable pitch airplane propeller turning so fast you can't see it.

There are not only the questions of oil pressure and changing pitch, but terrific centrifugal force as well. Superfinish provides a degree of smoothness which makes possible and protects the nicely fitted oil-tight bearing of the blade in the hub.

Also, the roller bearing at the shank end must be a tight press fit. This fit is insured and preserved through Superfinish, which removes all amorphous smear metal which could break down or score this critical surface.

An Automatic Superfinisher handles both surfaces in a single operation. The 4½" diameter is ground to approximately 30 micro-inches, and the Superfinishing is completed in only 45 seconds—with floor-to-floor time depending on the handling equipment available for the big blades.

Superfinishing, by removing all amorphous "smear metal" on variable pitch airplane propellers: (1) assures oil-tight seals, and (2) permits right press fit of blade in hub.

Fine surface finishes are solving troublesome problems like these in all industries. For complete information on Superfinishing, write for free booklet, "Wear and Surface Finish."

HEAVY FANS BALANCED FOR LONGER BEARING LIFE

Service Problems Are Reduced

Balancing is just as vital for unwieldly parts, like these heavy fans, as it is for smaller high-speed rotating members.

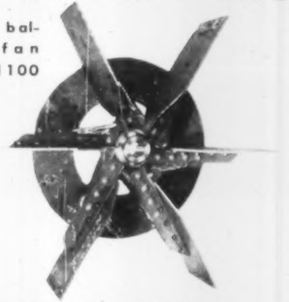
The Raymond Pulverizer Division of Combustion Engineering-Superheater Inc., Chicago, knows this. Components of its pulverizing and drying systems are these large fans for exhausting air and materials, such as coal dust. In service, the fans turn anywhere from 900 to 1200 r.p.m. They are fabricated of heavy steel plate and range from 40" to 80" in diameter, and weigh up to 2000 lbs. Production by size runs in lots of from 6 to 10.

The spiders as well as the entire assembly are dynamically balanced on a Gisholt 3U Dynamic Balancer—to as little as one-tenth ounce inch. The machine gives a direct reading of the amount of corrections required and where they are to be applied with no additional calculations or cut and try procedure. Corrections are made without removing the workpiece and by adding metal weights or deposits of weld metal. Balance is rechecked.

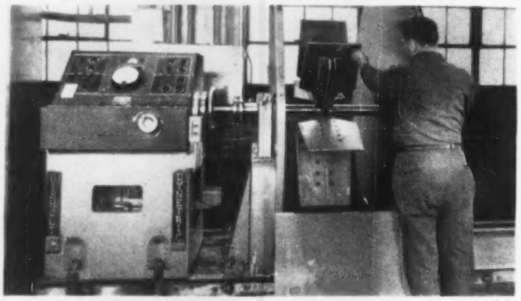
This whole balancing job is thus completed in 1 operation, on 1 machine with a minimum of time, cost, floor space and handling.

DYNETRIC BALANCERS

DEVELOPED JOINTLY WITH WESTINGHOUSE ELECTRIC CORPORATION
DYNETRIC IS A TRADE MARK REG. U. S. PAT. OFFICE BY WESTINGHOUSE ELECTRIC CORPORATION



This 54" balanced fan weighs 1100 lbs.



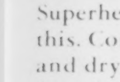
Left, the operator marks amount of unbalance on fan blade.

The Gisholt Round Table represents the collective experience of specialists in the machining, surface-finishing and balancing of round and partly round parts. Your problems are welcomed here.

GISHOLT Balancing School

Because of the fast-growing use of balancing—Gisholt, in answer to industry-wide requests, now offers complete courses in the theory and practical application of balancing. Two and three week courses are open to maintenance men, production men, process engineers and others. Because class enrollments are limited for closest personal attention, write for complete information now.

No. 651
569

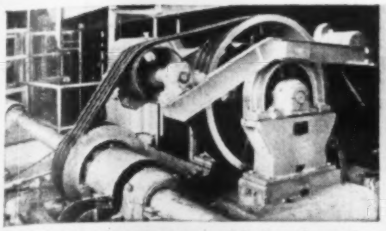


GISHOLT MACHINE COMPANY

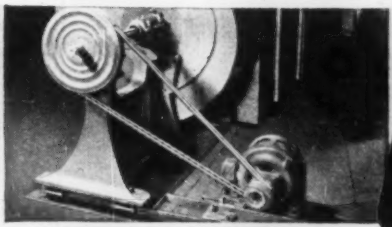
Madison 10, Wisconsin

A general catalog on machines listed below is available on request.

TURRET LATHES • AUTOMATIC LATHES • SUPERFINISHERS • BALANCERS • SPECIAL MACHINES

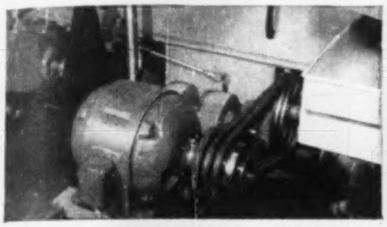


Paper Making Machine—Motion Control *Vari-Pitch* drive synchronizes paper machine sections.

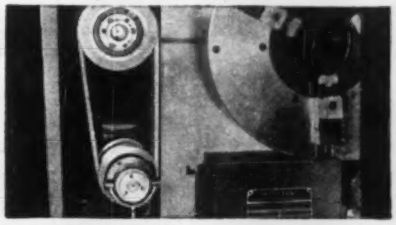


Air Conditioning unit — Stationary Control *Vari-Pitch* drive provides for seasonal adjustments.

TEXROPE Drives for Speed Control

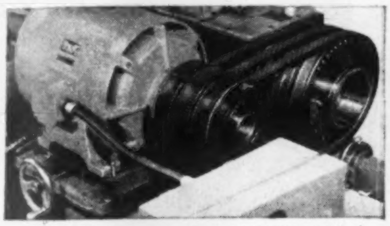


Cigarette Making Machine — Stationary Control *Vari-Pitch* drive provides for infrequent speed changes.

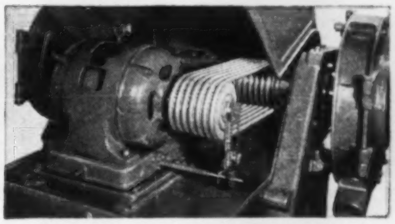


Pipe Threading Machine—Automatic *Vari-Pitch* drive gives simple, stepless handwheel speed changes.

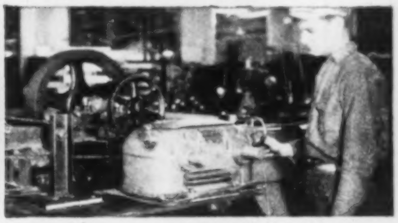
Solids Handling Pumps—Double Motion-Control *Vari-Pitch* drive provides extra wide speed range.



Automatic lathe — Automatic *Vari-Pitch* sheave gives stepless speed changes for making ultra-fine finish.



Grinder—Motion Control *Vari-Pitch* drive holds cutting speed constant as diameter of wheel wears.



Conveyor — *Vari-Pitch* Speed Changer raises or lowers speed to meet production requirements.

HOW USERS PROFIT
With *Texrope* Adjustable Speed Drives

TAKE A TIP from these users. Get the speed you need for peak efficiency by adding *Texrope* variable speed drives. Best of all, no elaborate equipment — no special costly motors are required.

You'll increase efficiency . . . get maximum output when you adjust speed to meet variations in: the part processed; tooling; machine loading; and temperature and humidity.

There's a type or size *Texrope* adjustable speed drive to fit any requirement. Whether you need to change speeds rarely or frequently — when the machine is shut down, or when it's running — whether you're using one horsepower or 50, Allis-Chalmers can supply you.

In addition, Allis-Chalmers offers you more than the drive itself. A-C offers the extra engineering skill that naturally results from having more industrial V-belt installations than any other manufacturer. This in itself is important.

Get section 20P50 for complete engineering information on *Vari-Pitch* sheaves from your A-C Authorized Dealer or Sales Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Choose from These Types of Variable Speed Drives

VARI-PITCH SHEAVES for A-B, B, C, D, and E belts — speed variation 15% to 25% per sheave. Capacities 1 to 125 hp. Stationary type — for changing speed when motor is stopped. Motion Control type—for changing speed when motor is running.

WIDE RANGE VARI-PITCH SHEAVES for Q or R wide belts provide up to 2 to 1 speed range . . . fractional to 40 hp. Available in Stationary Control and Automatic types.

VARI-PITCH SPEED CHANGER — enclosed unit for adjusting speed while machine is in motion. Provides up to 3.75 to 1 speed range. Capacities 1 to 75 hp.

A-3262

Texrope and Vari-Pitch are Allis-Chalmers trademarks.

A-C

ALLIS-CHALMERS

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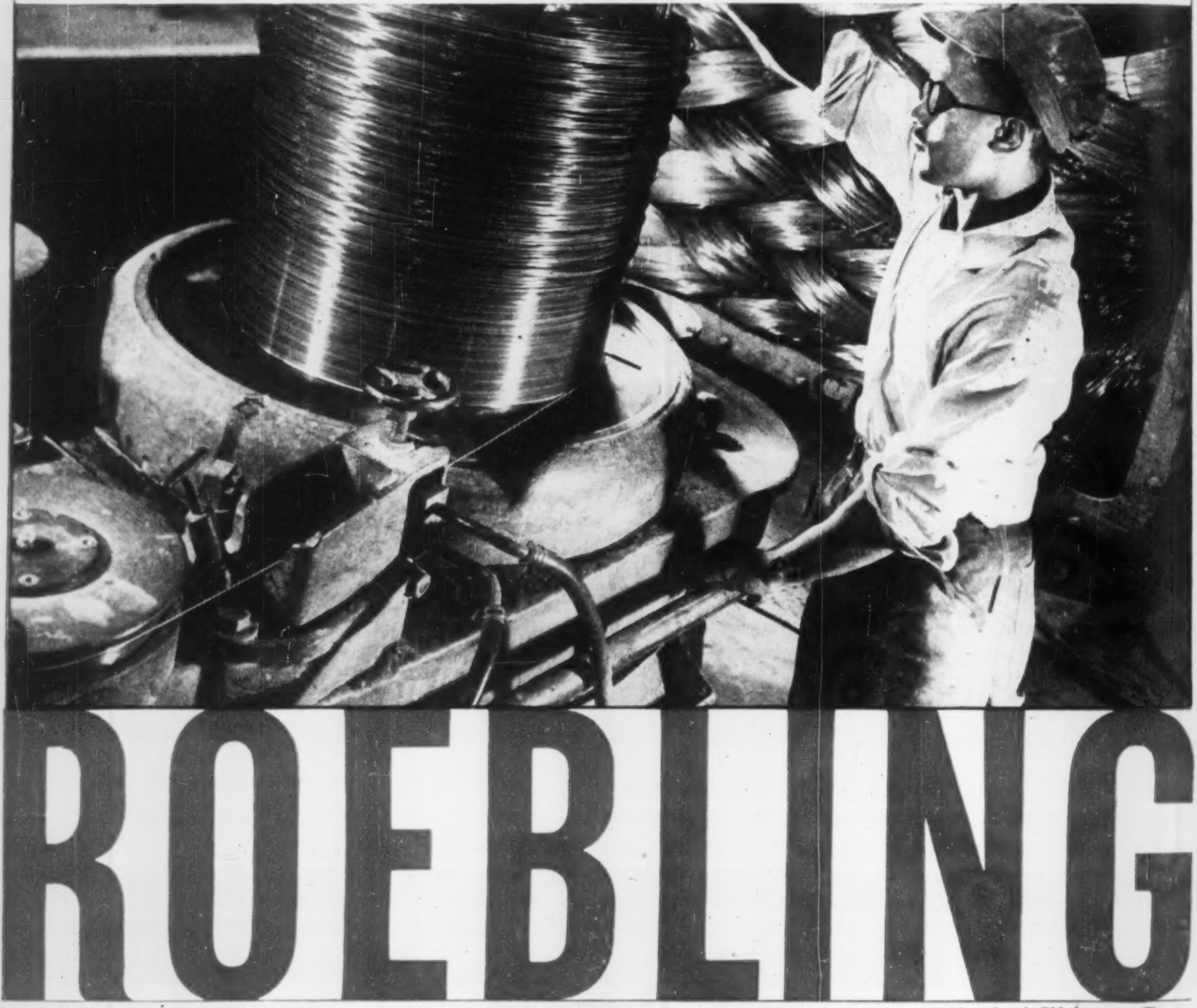
Roebling's is one of the largest specialty wire mills in America and from steel-making to finished product every manufacturing step is performed in Roebling's plants. Today large quantities of this wire are required in the nation's rearmament program, but Roebling will always do everything possible to meet your requirements. John A. Roebling's Sons Company, Trenton 2, New Jersey.



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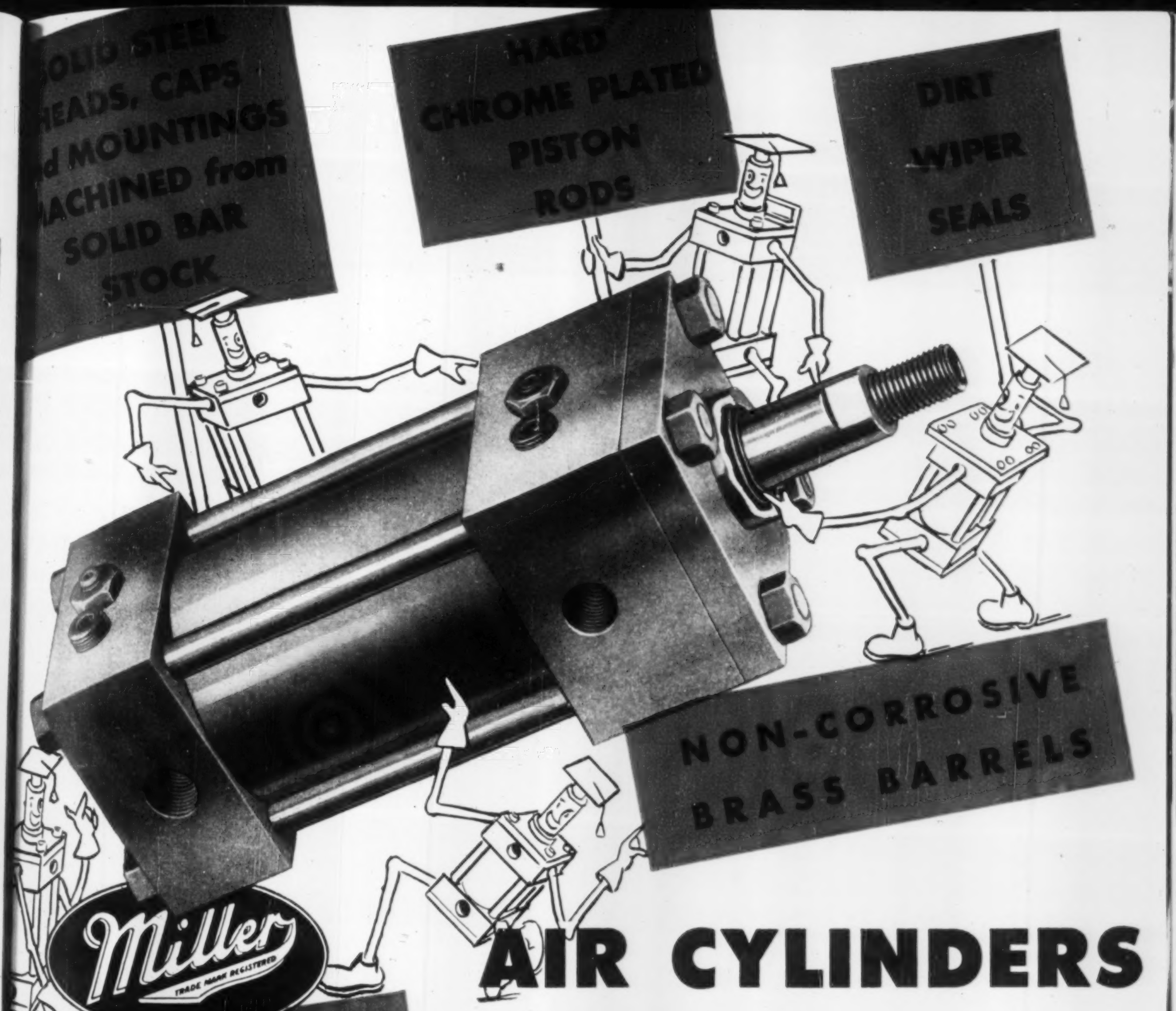
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(Write for FREE copy of these "Standards")

The four features illustrated above serve to show how Miller Air Cylinders *for years* have been meeting—*even exceeding*—the high quality set by the recently adopted J.I.C. Pneumatic Standards for Industrial Equipment. See for yourself! . . . write for our free bulletin A-105 and receive also your own *free* personal unabridged copy of these "Standards" with standard symbols, sample circuit, interesting point-by-point comparison—all neatly compiled into a handy booklet that fits your reference file and folds to fit your pocket.

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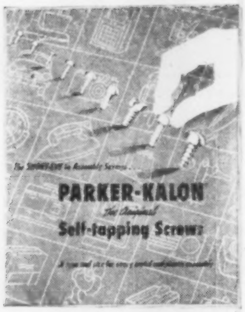
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HERE ARE THREE ^ REASONS WHY

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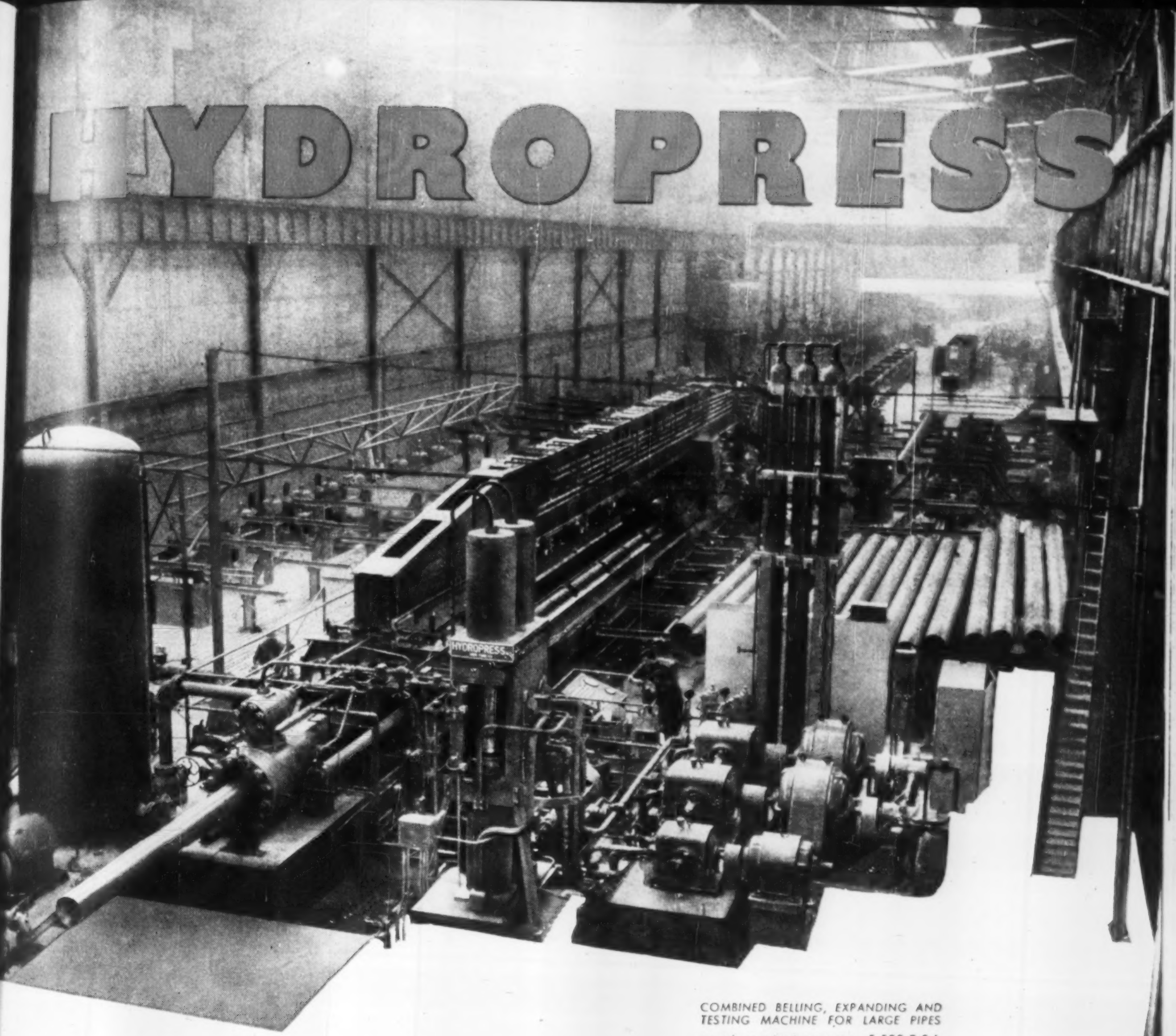

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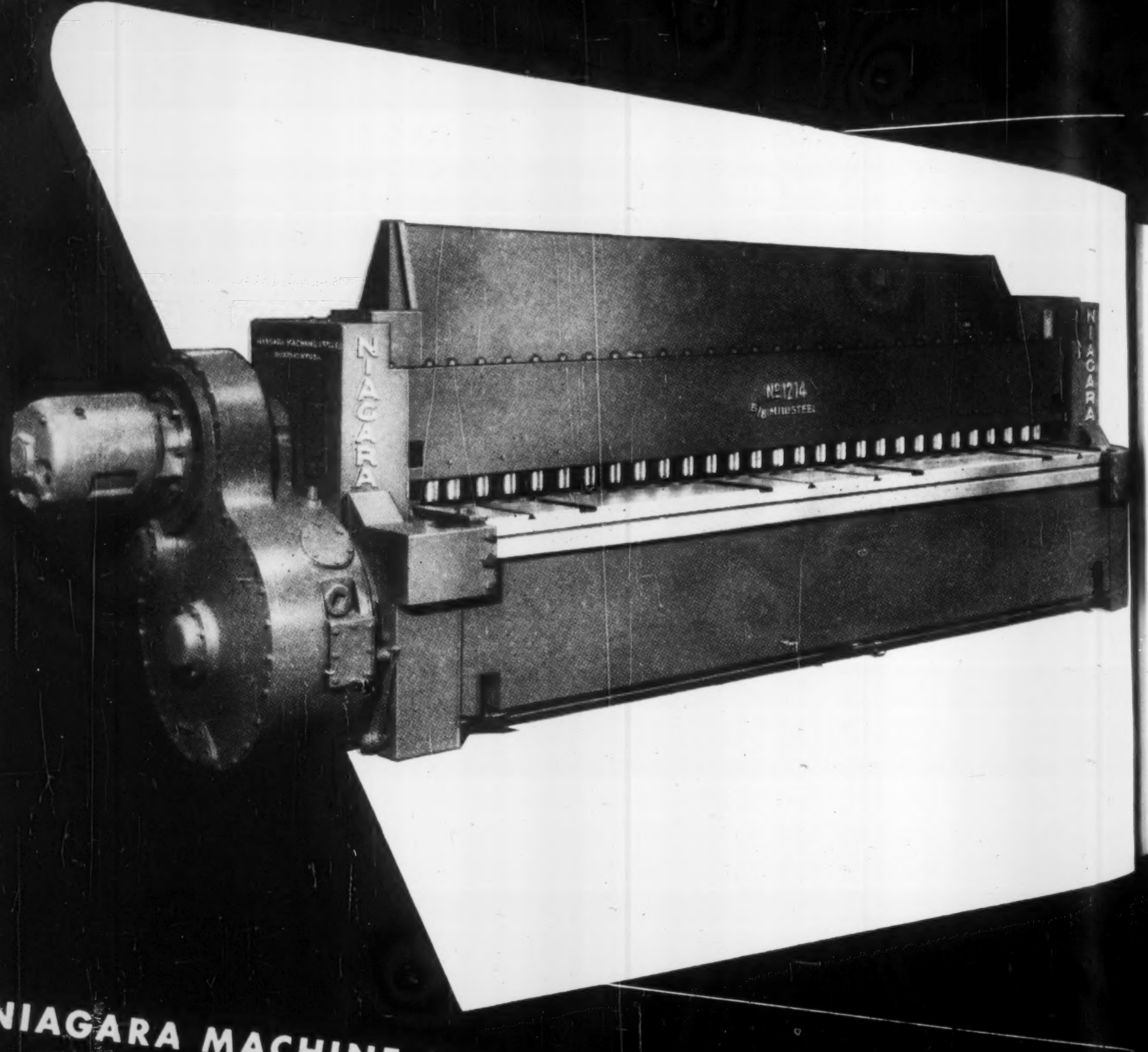
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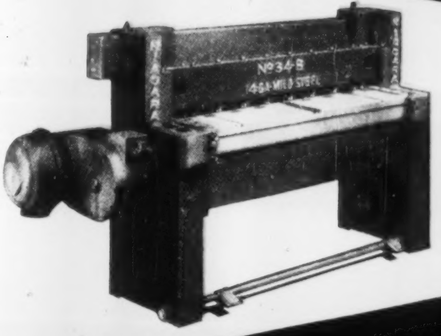

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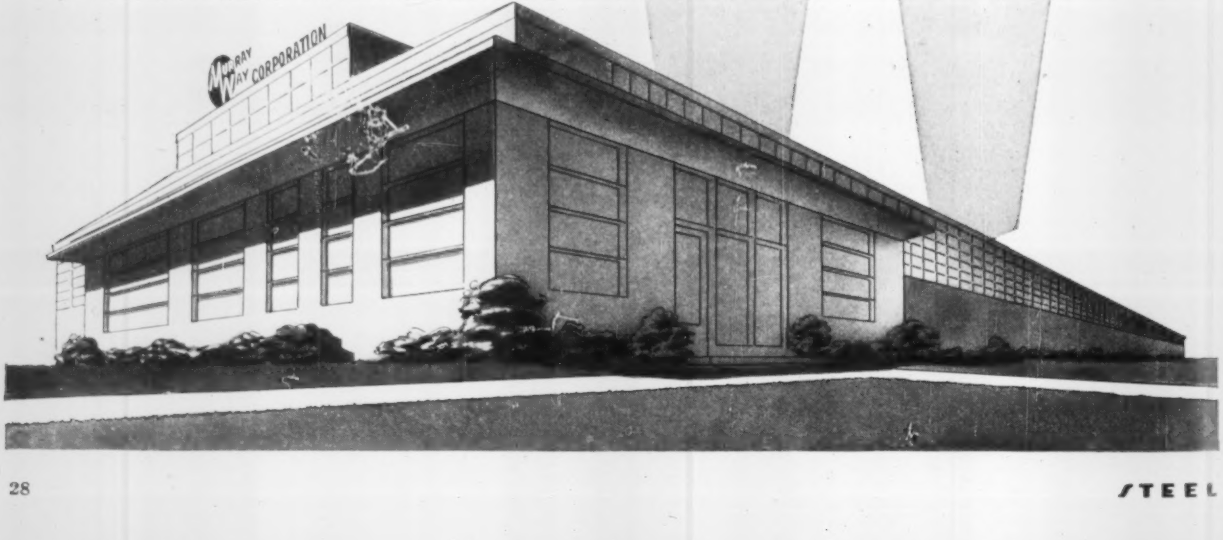

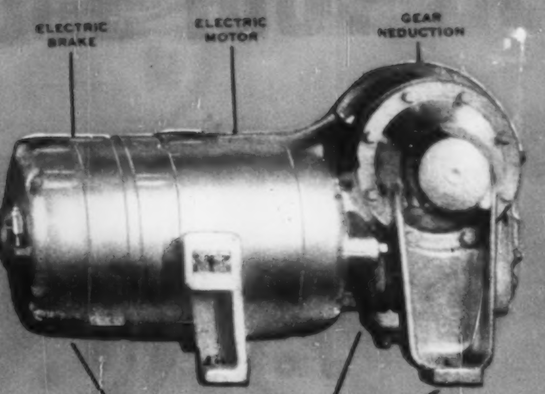

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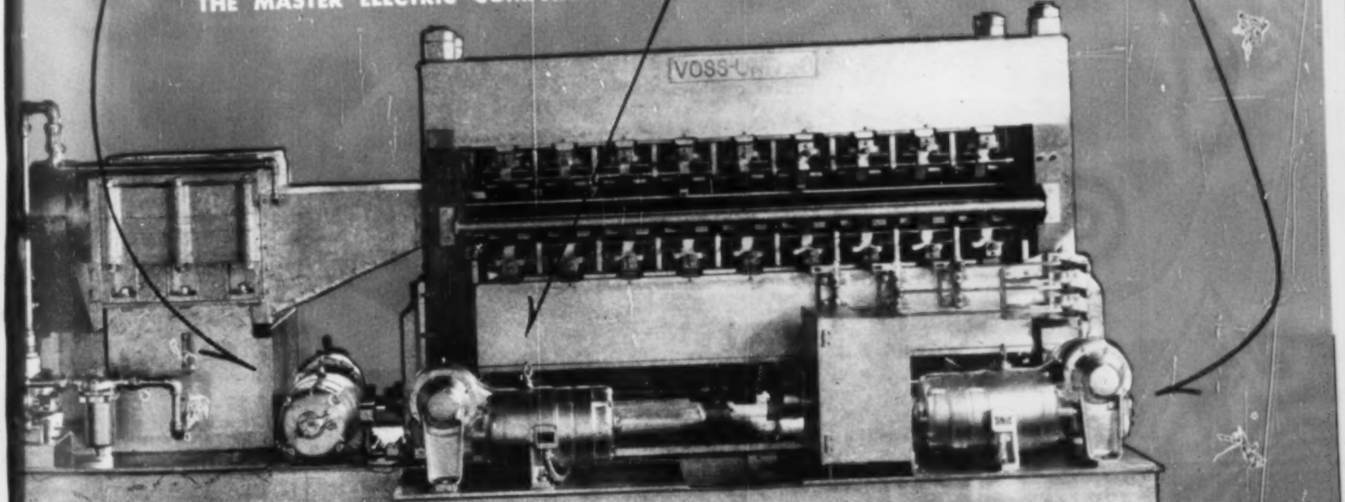

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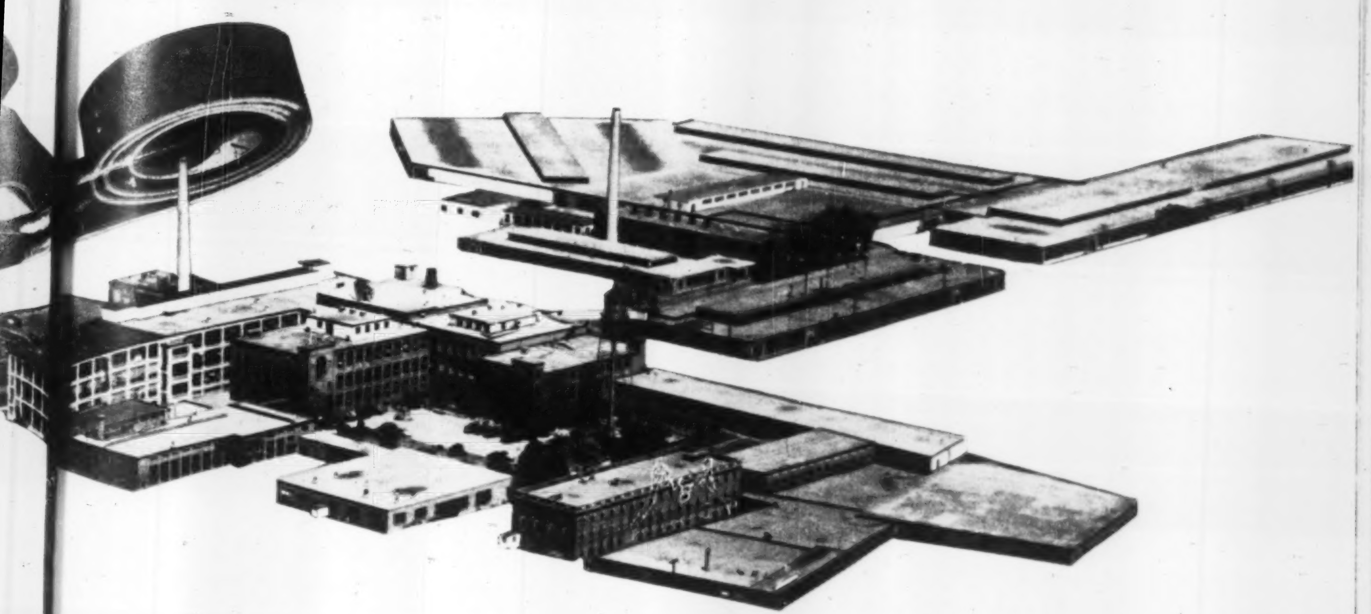

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A statement like that takes in a lot of territory . . . but we can go even farther and say that BEHR-MANNING produces coated abrasive products that you *may not now know that you need*, but which if used in your production processes may well bring you important additional profits. For within the 30,000 coated abrasive products mentioned above, some are very new and their possibilities not yet generally realized.

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Full details on this free service, and location of Methods Room nearest you, are covered in the book, "Proving Ground for Production." Write for your copy today. Address Dept. S-6.

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So, load Union Cold Finished Steel Bars. Watch spindles whirl, tools bite deep, cutting oils gush steadily and finished parts thump a tattoo into pans.

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Better and better steel MACHINABILITY has been the 60-year goal at Union Drawn. Today, no one knows more about steel machining than the men who make Union Cold Finished Bars. Year after year, every new bit of knowledge is translated into improved steelmaking and finishing.

Because of such intense concentration on one single goal, today's Union Cold Finished Steels allow you top ratings on feeds and speeds . . . longer tool life with fewer grinds . . . freedom from abrasive elements . . . smooth, bright machined surfaces . . . high production . . . low unit cost.

Need help on any machining or change-over problem? "MACHINABILITY Headquarters" can help you there, too. Union Drawn Field Representatives have prompt solutions to most production problems. They're ready for consultation any time you are. Just write:

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This "X" Steel May Boost Production Even Further

Are your parts and equipment such that you can use higher speeds and longer tool life? Then it will pay you to investigate Union Drawn's extra fast machining Bessemer Screw Steel, B-1113X. Your Union Drawn Field Man will be glad to tell you all about it.

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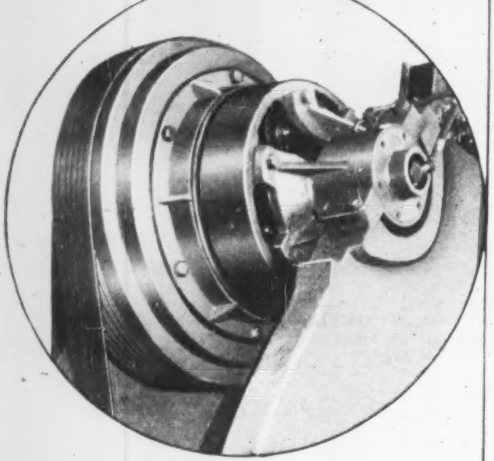
Cleveland

DRUM TYPE Friction Clutch and Brake

the key to economical press operation

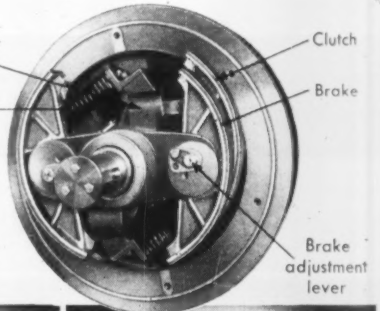
Advanced design of the patented Cleveland Drum Type Friction Clutch and Brake offers 11 features* for increased efficiency and economy of press operation. Actual performance records prove that the air operated Cleveland Drum Type Friction Clutch contributes to greater press efficiency, reduced down-time and lower press operating costs. Specify Cleveland Drum Type Friction Clutches and Brakes. They can be installed on most Cleveland presses, new or old. Complete information on request.

A-4165

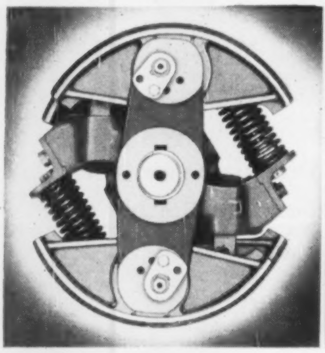


*11 OUTSTANDING DESIGN ADVANTAGES

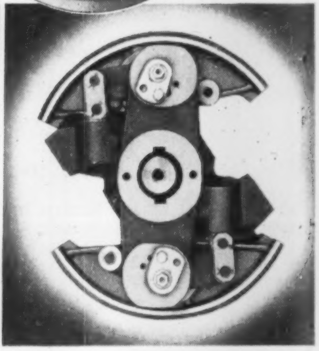
- Clutch and Brake cannot engage simultaneously . . . always FULL Clutch or FULL Brake.
- Simplified maintenance . . . less down-time for there is a minimum number of parts.
- Less power is required for clutch operation due to lightweight construction.
- Drum type design assures quicker starts and stops.
- Longer friction life is assured . . . as all idle friction surfaces are completely disengaged eliminating drag, unnecessary wear and destructive heat.
- Clutch and Brake adjustments are easily made.
- Entire unit can be serviced without removal from press.
- Air cylinders provide maximum performance with minimum amount of air.
- Spring-loaded Brake brings slide to immediate stop in event of current or air supply failure.
- Clutch temperature remains relatively cool—no wear from excessive heating.
- So designed that it can be installed on most Cleveland presses, new or old.



Cleveland unit with clutch and brake drums removed. Brakes can be reset without removing drums by simple adjustment of lever pin. Clutch adjustment is automatic.



Clutch and brake combined.



Clutch with brake shoes removed.

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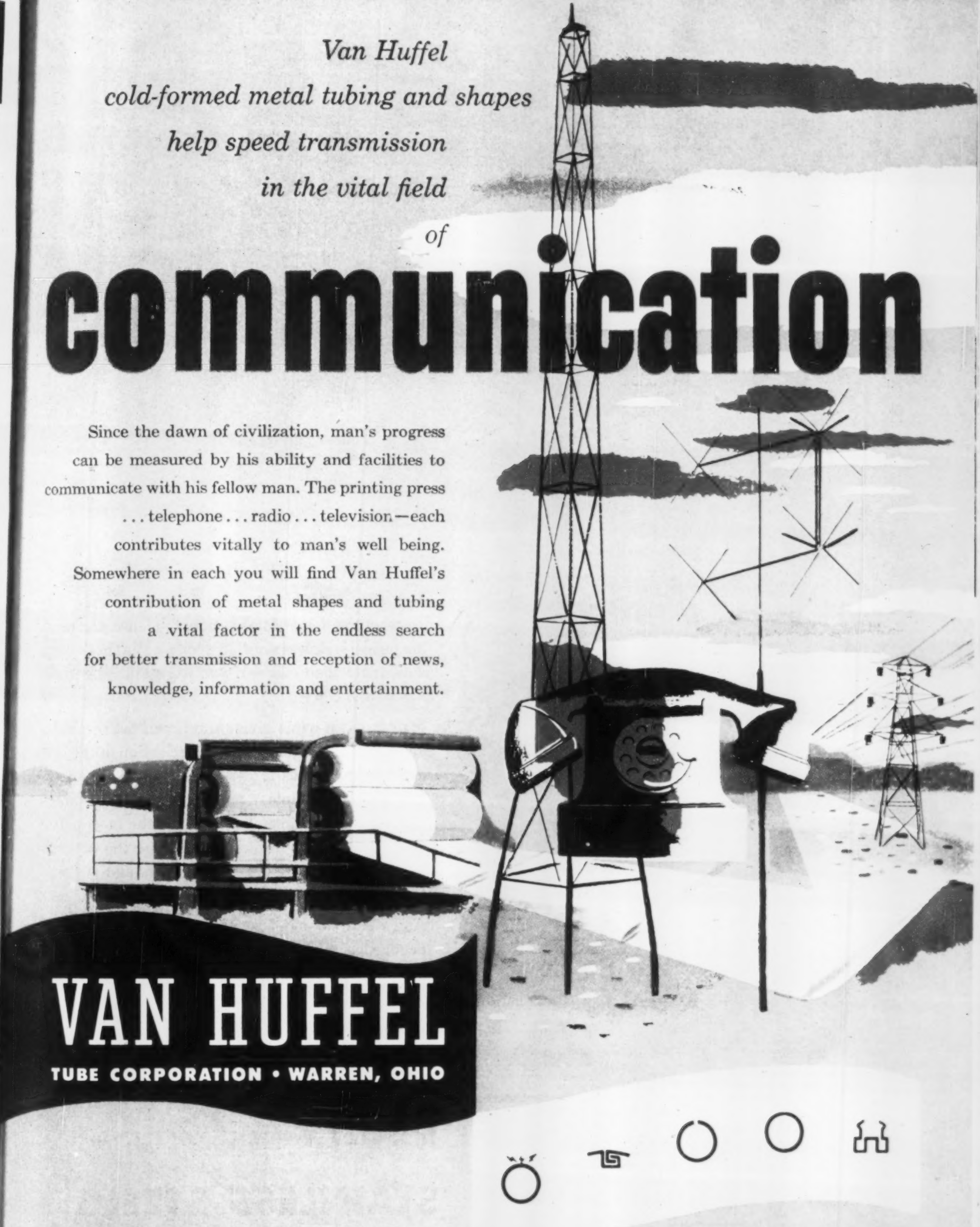


Van Huffel
cold-formed metal tubing and shapes
help speed transmission
in the vital field
of

communication

Since the dawn of civilization, man's progress can be measured by his ability and facilities to communicate with his fellow man. The printing press . . . telephone . . . radio . . . television—each contributes vitally to man's well being. Somewhere in each you will find Van Huffel's contribution of metal shapes and tubing a vital factor in the endless search for better transmission and reception of news, knowledge, information and entertainment.

VAN HUFFEL
TUBE CORPORATION • WARREN, OHIO

WELDED, LOCK SEAM, OPEN SEAM, BUTTED TUBING, SHAPES AND MOULDINGS

Stainless must go a long way, too!

To meet the demands of national defense and civilian needs, stainless must go a long way. That's why, now, more than ever—if you use stainless—use it wisely and efficiently.

Stainless is a name given to a broad list of grades and finishes—therefore, careful selection of the best available materials for your job is of prime importance. Here Crucible, a pioneer in the development of stainless steels, can help you get the most out of your share of stainless stocks through the unparalleled experience of our metallurgists and stainless fabricating specialists.

And when you can't get the grade of stainless you need, Crucible technical personnel can give you sound advice on the best available materials.

Until the time when stainless is more freely available . . . stretch your supplies of stainless. To do this . . . make use of Crucible's wealth of stainless steel experience.

CRUCIBLE first name in special purpose steels

51 years of Fine steelmaking

STAINLESS STEELS

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

STAINLESS • REX HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS

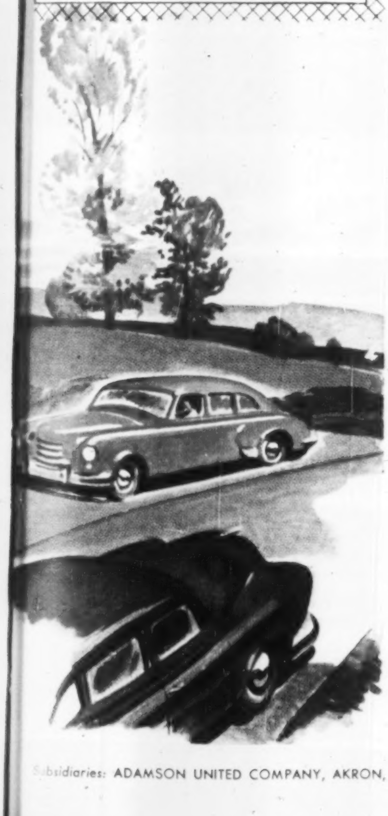
Sheet Mills of about 50 Years Ago

UNITED
UNITED
UNITED
UNITED
UNITED

United 6 Stand, 4-High Tandem Hot Mill

50

YEARS AGO



The Old Grey Mare Was Queen of the Highways

DEVELOPMENT of mass production methods in the manufacture of automobiles brought a new era of progress to America. Paved road construction paced new car production . . . farmers were rescued from isolation . . . remote and inaccessible areas were opened for development . . . new industries were born, commerce increased, living standards raised to new, high levels.

Without steel, and the machinery for rolling and forming it, mass production of the automobile and the progress attending it, would have scarcely been possible.

For what United has been able to contribute to better steel rolling processes, we are deeply grateful. It is our hope that we may continue to serve the industry as well in the years to come as we have so earnestly tried to serve it in the past.

Golden Anniversary
1901 UE&FCO 1951

UNITED

ENGINEERING AND FOUNDRY COMPANY

Pittsburgh 22, Pennsylvania

Plants at PITTSBURGH • VANDERGRIFT • NEW CASTLE • YOUNGSTOWN • CANTON

Subsidiaries: ADAMSON UNITED COMPANY, AKRON, OHIO • LOBDELL UNITED COMPANY, WILMINGTON, DELAWARE • STEDMAN FOUNDRY AND MACHINE CO., INC., AURORA, INDIANA

Defenders of Tomorrow?

Though brimming with solemn pride, these young patriots know little of the price that was paid for their right to parade the colors.

In the joy of pretending, their boyish minds won't ponder the awful cost of American freedom from Valley Forge to the 38th Parallel.

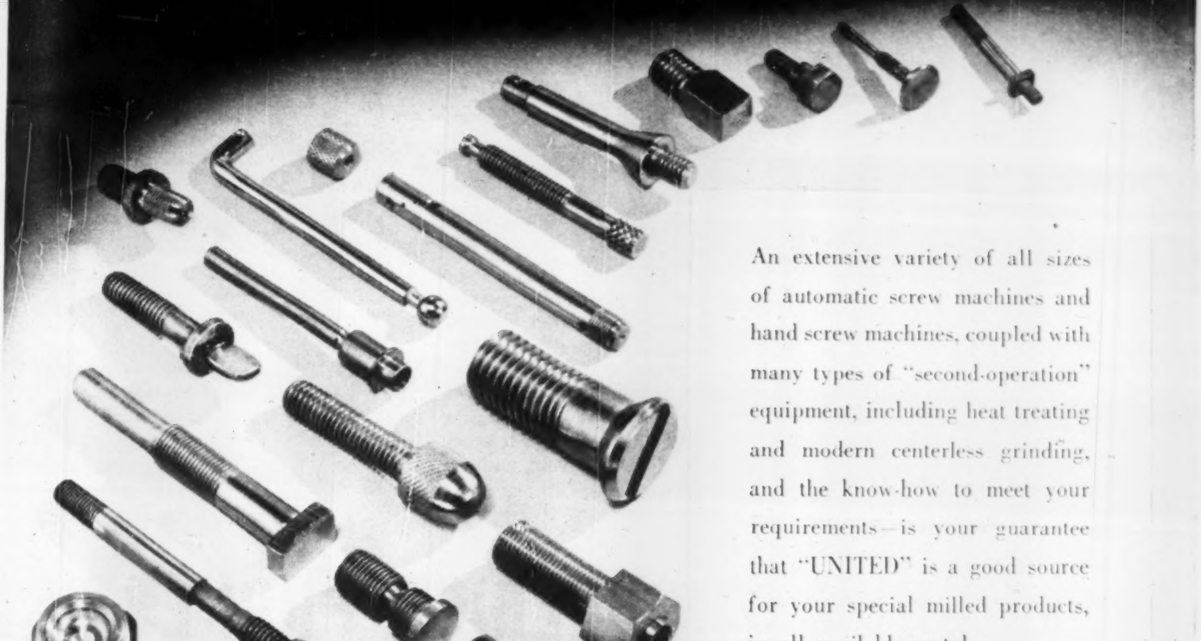
And that's as it should be.

As we commemorate the 175th Anniversary of our nation's independence, we join with you in renewed hopes that this present war soon will end; that the world will solve its problems peacefully; that our sons will never again be called upon to defend freedom with their lives.

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. STEEL-SERVICE PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • DETROIT • CINCINNATI
CLEVELAND • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO

UNITED
SPECIAL MILLED PRODUCT

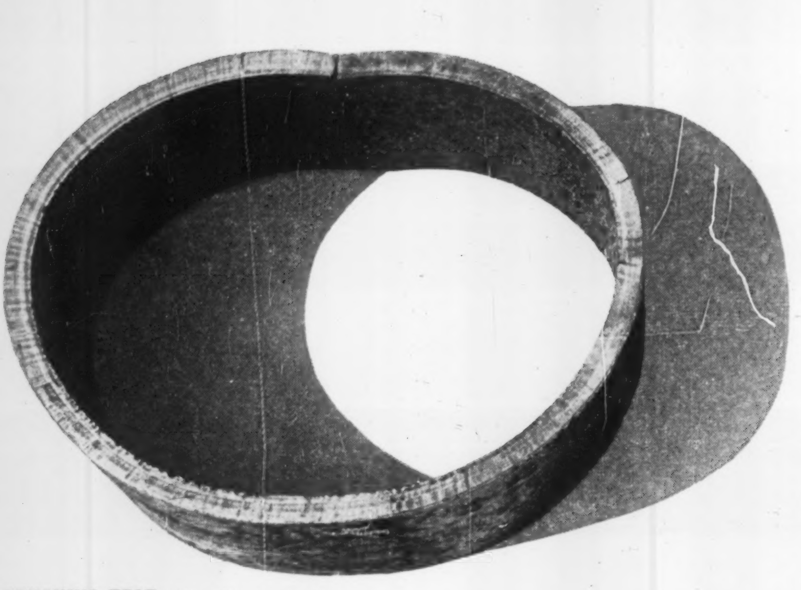


An extensive variety of all sizes of automatic screw machines and hand screw machines, coupled with many types of "second-operation" equipment, including heat treating and modern centerless grinding, and the know-how to meet your requirements—is your guarantee that "UNITED" is a good source for your special milled products, in all available metals.

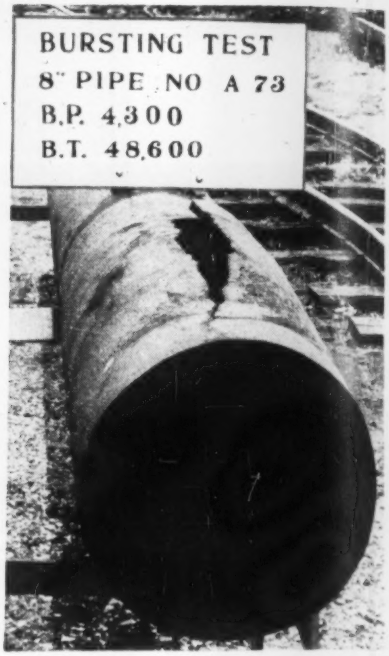
—when you think of fasteners think of United

SCREWS · NUTS · WASHERS
CLUTCH HEAD SCREWS
STAMPINGS

United Screw and Bolt Corporation
Chicago 8 Cleveland 2 NewYork 7



CRUSHING TEST: Ductile iron pipe sections, tested to fracture in compression, reveal the superior ductility of this new engineering material. Its strength and toughness make ductile iron an excellent material for tubular products. The average ring modulus of rupture on 8" diameter rings so tested by Underwriters Laboratories was 127,650 p.s.i. Photographs shown here were furnished by Lynchburg Foundry Company, Lynchburg, Va.



➡

BURSTING TEST: This 8" diameter pipe was cast in ductile iron, welded with Ni-Rod 55® (nickel welding rod developed for cast iron) and then subjected to bursting tests. Average internal bursting pressure: 4,300 lbs. Average bursting tensile strength: 48,600 p.s.i. All cracks occurred outside of the weld, with no shattering.

DUCTILE IRON'S SUPERIOR PROPERTIES

revealed by crushing and bursting tests

DUCTILE IRON is a cast ferrous product that combines the *process advantages* of cast iron with many of the *product advantages* of cast steel.

In less than two years, ductile iron has attained wide acceptance because it offers excellent castability, high mechanical properties, and good machinability. Parts cast in ductile iron show superior pressure tightness, high modulus and resistance to shock.

Typical current applications include ball joints, brake drums, cover hangers for soaking pits, gears on agricultural machinery, large valves, pressure heads for pumps, snow guards and plow points.

AVAILABILITY: Send us details of your prospective uses, so that we may suggest a source of supply from some 100 authorized foundries now producing ductile iron under patent licenses.

Request a list of available publications on Ductile Iron... mail the coupon now.

The International Nickel Company, Inc.
Dept. S., 67 Wall Street, New York 5, N. Y.

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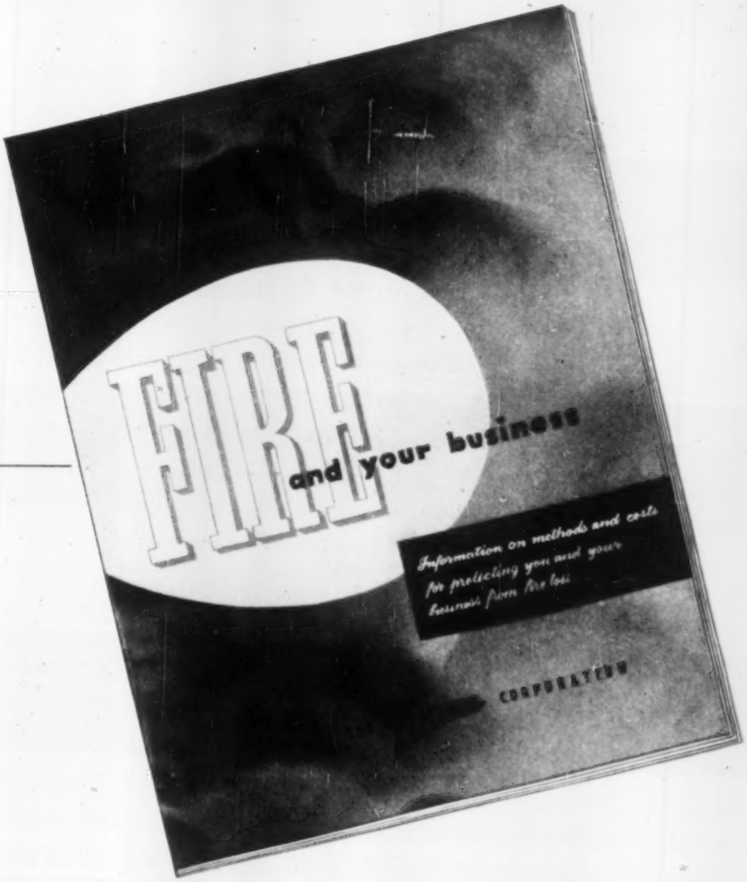
this book can help you answer an important question


FIRE
and your business
Information on methods and costs for protecting you and your business from fire loss
CORPORATION

Whenever you design a building there is one question you always consider: Is this building and its contents adequately protected from fire? "Fire and Your Business" can help you answer this important question. It shows you how, and why a Viking Sprinkler can make your buildings infinitely safer from fire loss. In addition it shows how new Viking developments have eliminated the penalties formerly inflected on interior design by sprinkler systems — maintaining the beauty and symmetry of the most care-designed interior. "Fire and Your Business" gives you valuable information on all types of sprinkler systems and their application. It will show you how well equipped Viking engineers, strategically located throughout the country, are available to work with you and follow thru to make properly engineered installations quickly and economically. And remember this important point: Your clients will appreciate your farsightedness when you show them how your Viking equipped building cuts fire protection costs as much as fifty to ninety per cent. All Viking Devices approved by Underwriters' Laboratories and Factory Mutual Laboratories.

To receive your copy write today.

DON'T GAMBLE WITH FIRE — THE ODDS ARE AGAINST YOU!

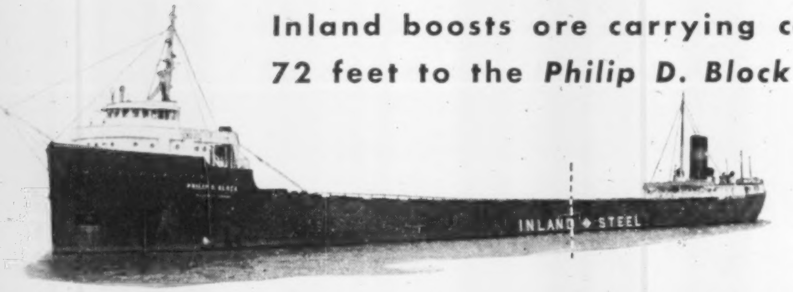
the VIKING corporation
HASTINGS, MICHIGAN

OFFICES IN PRINCIPAL CITIES

STRETCHING

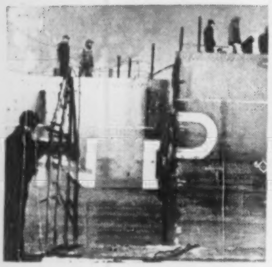
a ship stretches steel supply . . .

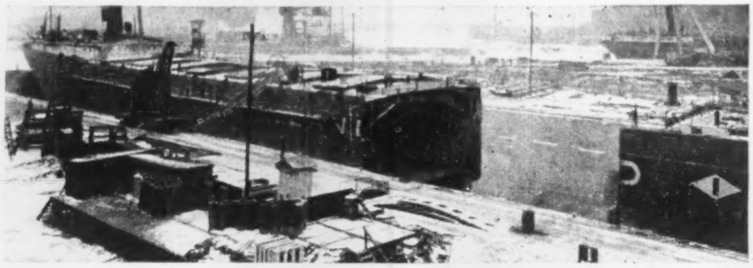
Inland boosts ore carrying capacity by adding 72 feet to the *Philip D. Block*

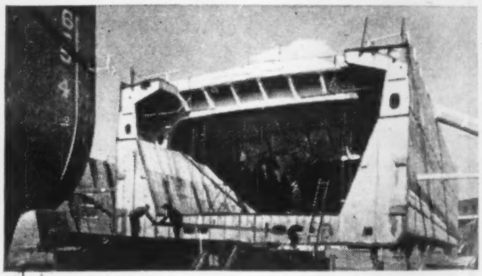


40,000 more tons of much-needed ore is made available to Inland Blast Furnaces each year.

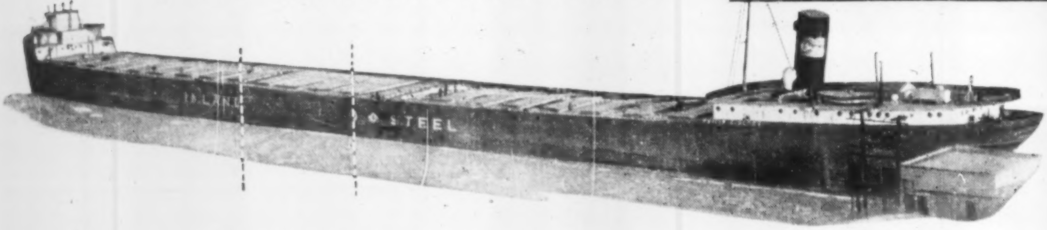
1 A "before" photo of the *Philip D. Block* showing where ship is to be cut in half. This ship, built in 1925 had an overall hull length of 600 ft. Lengthening will bring the *Block* to within 6 ft. of the new *Wilfred Sykes,* Inland's flagship and largest vessel on the Great Lakes.







2 Ship has been opened amidships, floated apart and is ready to receive new 72 ft. midsection. Addition of this section will give the ship an average carrying capacity in excess of 14,000 gross tons. Previous average tonnage was 12,800. In a normal lake shipping season, this vessel will make 33 complete round trips between the ore docks at Superior, Wisconsin, and Inland's mill at Indiana Harbor. Operating on this schedule, the *Philip D. Block* will deliver an extra 40,000 tons of iron ore in 1951.



3 New mid-section is in place and reconstruction complete. Total time in drydock: 100 days. The *Philip D. Block* has since joined her four sister ships, and the many other lake ore carriers, in the important task of supplying iron ore to a nation counting more than ever on a big year in steel.

The lengthening of the *Philip D. Block* is just one more step in a continuing modernization and expansion program at Inland.

HELP!

Your SCRAP is needed by the Steel Industry for National Defense

INLAND STEEL COMPANY

38 South Dearborn Street, Chicago 3, Illinois

Principal Products: Sheets, Strip, Tin Mill Products, Bar Mill Products, Plates, Structural Shapes, Floor Plate, Piling, Reinforcing Bars, Rails and Track Accessories, Pig Iron, Coal Chemicals.

Sales Offices: Chicago • Davenport • Detroit • Indianapolis • Kansas City
Milwaukee • New York • St. Paul • St. Louis

INLAND

June 25, 1951

A GUIDE TO

CMP

CONTROLLED MATERIALS PLAN

Here's a handy reference section of 32 pages compiled by STEEL to help you operate under the Controlled Materials Plan, which goes into effect July 1, 1951. It puts into one package for you the official CMP regulations, along with terse summaries of each subsection of each regulation; it presents a chart showing how CMP operates for "A" and "B" products; it explains what CMP is, why it's necessary, and how it operates; it show tables listing the controlled materials, the lead times for ordering steel, copper and aluminum, and minimum mill quantities for those metals. You'll find a checklist and digest of NPA materials orders, regulations and delegations, and other informative features. You'll see them as you turn the pages.

Compiled by the Editors of STEEL Penton Bldg., Cleveland 13, O.

WALTER C. SKUCE

. . . in charge of Controlled Materials Plan

- Appointment of Walter C. Skuce as National Production Authority's Assistant Administrator in Charge of Production Controls and the Controlled Materials Plan put him back into a Washington position similar to one he held during World War II.

Mr. Skuce was born in Ottawa, Canada. He was graduated from Ottawa Collegiate Institute in 1923, and in that year entered the employ of General Electric Co. where he remained 19 years, working in many phases of manufacturing.

In November, 1942, he joined the War Production Board and served for three years in various positions, including that of Director of the Controlled Materials Plan Division and Deputy Vice Chairman for Operations.

Since 1945, Mr. Skuce has been associated with Owens-Corning Fiberglas Corp., Toledo, O. He is now on leave from his post as manager of the transportation products division of that firm.

A Message from the National Production Authority

THE CONTROLLED MATERIALS PLAN, we believe, will provide an overall basis for assuring the highest possible level of industrial production and construction in this country.

The CMP is aimed at getting the tools of war made to protect our way of life and to have these made in the right quantity at the right time to carry out the objectives of the Joint Chiefs of Staff. It is aimed at increasing our industrial might by expansion of basic resources and industrial plants. It is directed also toward the important objective of keeping a high level of consumers durable goods production.

Unless we become engaged in a war it is recognized that we might have a dual economy through 1952. It is hoped that in 1953 the objectives stated by Director of Defense Mobilization Charles E. Wilson will be accomplished, so that the control measures which we have had to take during the present declared emergency may be lifted in such a way that the military needs may be carried out on a schedule and yet permit a maximum level of civilian production and construction with a minimum of government regulation.

Walter C. Skuce

NPA ASSISTANT ADMINISTRATOR,
In Charge of Production Controls and
the Controlled Materials Plan

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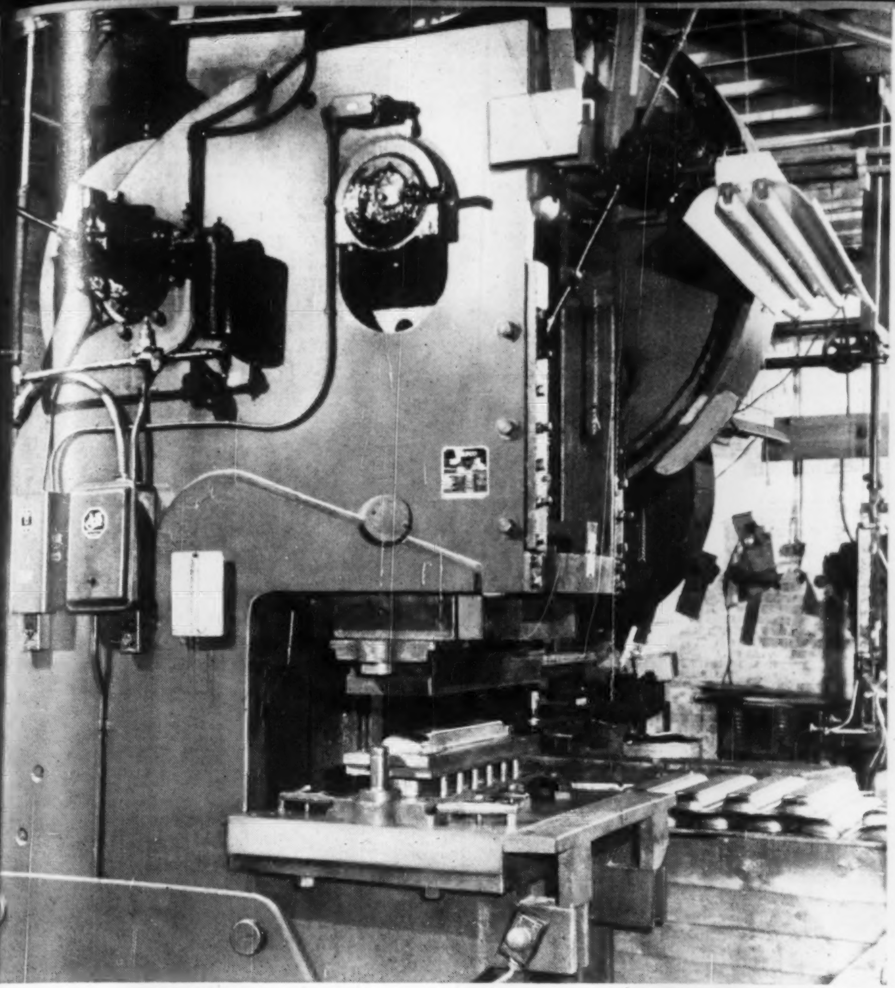


What's YOUR problem?

Wesley L. Tharp, with headquarters in Indianapolis, is the Standard Oil lubrication specialist who recommended STANOSTAMP Compound "C" to this midwest lamp manufacturing company.

Specially trained and experienced Standard Oil lubrication specialists are located in strategic spots throughout the Midwest. There's one near your plant, ready to give you the benefit of his experience.

You can obtain his prompt, on-the-spot service by phoning or writing to your local Standard Oil office. And when the specialist calls on you, ask him about these other fine Standard Oil products.

STANICUT Cutting Oils. These special-duty cutting oils meet today's most exacting requirements and highest production schedules. Grades vary in viscosity and compounding. Each contains the correct proportion of extreme-pressure and friction-reducing ingredients.

STANICOOL HD Soluble Oil. Because of additional compounding, this heavy-duty soluble oil possesses the cooling ability of an emulsion and also gives better tool life and finer finishes than do conventional soluble oils.

STANOLEX Oils. Due to superior wetting ability, these oils are useful on bearings which are inclined to rust during shutdown, or because of high humidity. They are recommended for lubrication of ways and guides on machine tools which are prone to chatter when straight mineral oils are used.

Beats trouble to the draw...

Drawing lamp shades from 20 gauge, cold-rolled steel proved troublesome for the General Lamps Manufacturing Corporation of Elwood, Indiana. Rejections averaged 15%. In addition to this costly scrapping, finish was not satisfactory. It was difficult to remove the die lubricant from the completed shades. Dies had to be polished frequently.

Operators sought a die lubricant which could remedy their production slow-up. Of a number of products tried, STANOSTAMP Compound "C"—the recommendation of a Standard Oil lubrication specialist—gave the best results.

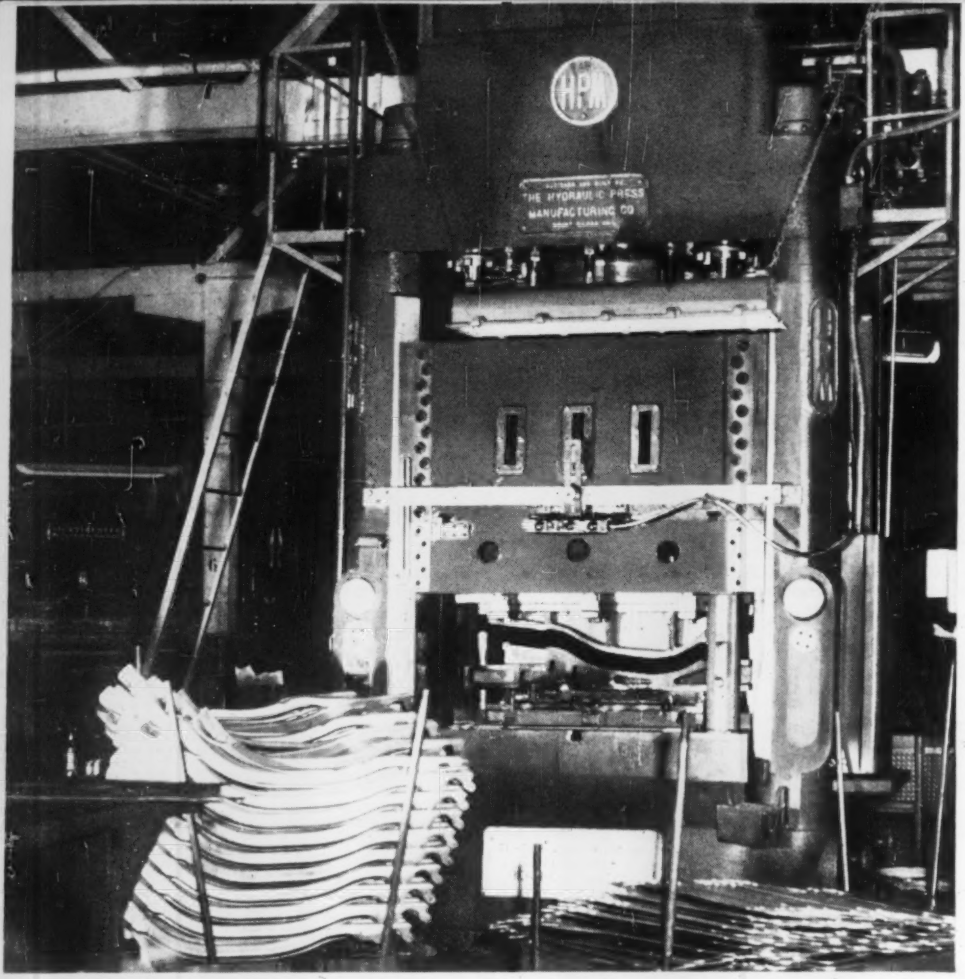
Use of STANOSTAMP "C" has cut rejections from 15% to less than ½%. Excellent finish has been obtained on the shades. Cleaning of dies has taken minimum time and labor. As a result, STANOSTAMP has helped boost production by more than 15%.

Stanostamp
REG. U.S. PAT. OFF.
Compounds

Discuss the advantages of STANOSTAMP Compounds and Standard Oil cutting oils with a Standard Oil lubrication specialist. His headquarters are near your plant. How you can benefit from his services is explained at the right.

Standard Oil Company (Indiana), 910 South Michigan Ave., Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD



Gain these benefits for your hydraulic operations

The big 400-ton hydraulic press shown above is used to stamp out parts for farm machinery in a big midwest plant.

When the press was first put into operation, plant operators followed the recommendation of a Standard Oil lubrication specialist and used STANOIL Industrial Oil in the hydraulic system. In over four years of continuous hard service, there has been no lost time because of inefficient performance of the hydraulic oil.

Oil capacity of the system is approximately 9 barrels; only 2 barrels make-up per year has been required. The oil in this system has never been changed. It has been centrifuged once to remove moisture which accumulated over three years' operation. Periodic tests of oil samples have shown that STANOIL has maintained its high lubricating quality. A recent analysis showed no increase in viscosity of the oil, no change in color, and a neutralization number of only 0.13 mg. KOH/gm.

STANOIL
TRADE MARK
Industrial Oil

You can rely on this unique many-purpose oil to give you the same clean, dependable service in your plant's hydraulic systems, speed reducers, head stock gears, auxiliary turbines, compressors, and electric motors. You can rely, too, on the expert, on-the-spot service of a Standard Oil lubrication specialist. How you can obtain his help, quickly and easily, is explained at the right.

Standard Oil Company, 910 So. Michigan, Chicago 80, Illinois.

What's YOUR problem?

D. G. Cripps, of Standard Oil's Grand Rapids, Michigan, office, is the Standard Oil lubrication specialist who recommended STANOIL for use in the hydraulic press shown at the left.

Complete familiarity with job requirements and lubrication applications equips a corps of such Standard Oil lubrication specialists throughout the Midwest to handle similar problems for plant operators.

One of these lubrication specialists is near your plant — ready to give you the benefit of his experience and training. You can obtain his services quickly and easily. Just phone or drop a card to the nearest Standard Oil Company (Indiana) office. Ask the lubrication specialist to explain the benefits of such widely accepted lubricants as:

SUPERLA Greases—Available in all consistency grades, SUPERLA Greases cover a wide range of applications. These products are comparable in quality to the highest type of special greases but are as readily available and economical as ordinary cup greases.

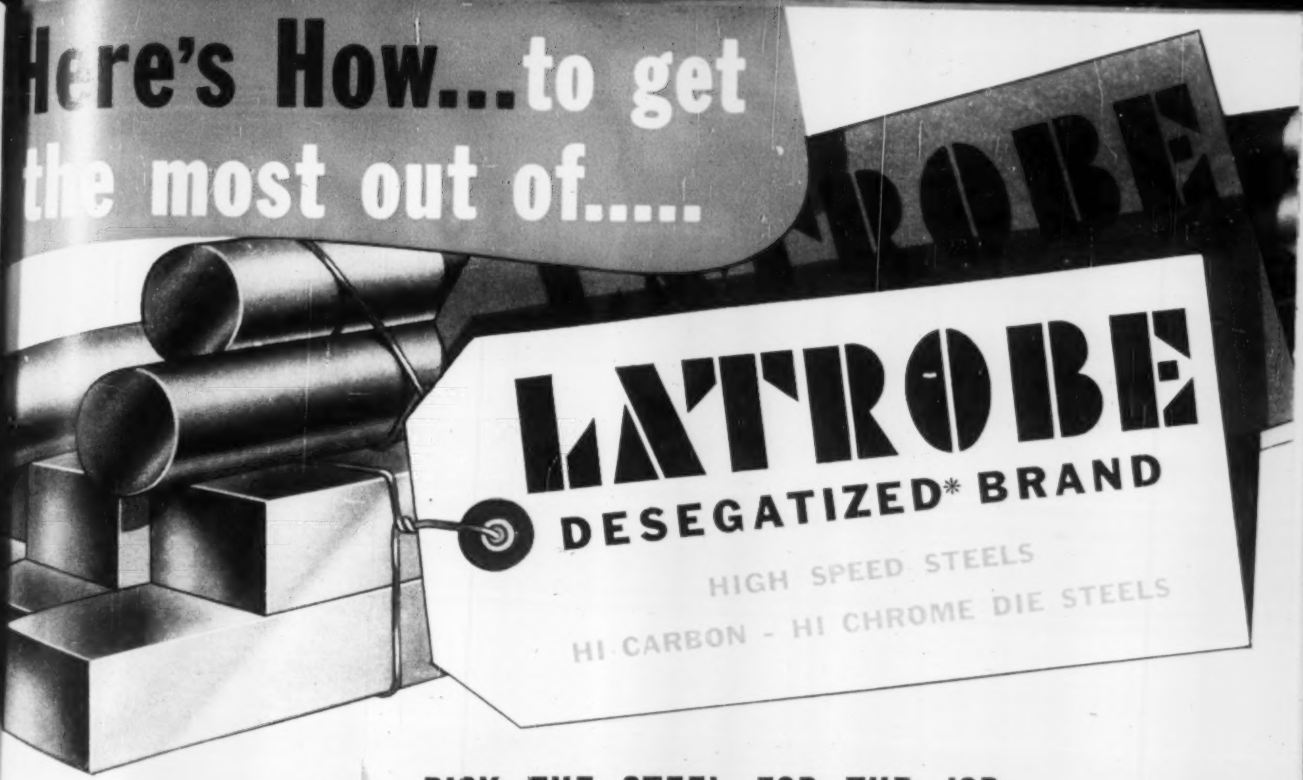
CALUMET Viscous Lubricants—On open gears and wire rope, these greases strongly resist washing and throw-off. Their superior wetting ability affords better coating of gears and chains, better internal lubrication of wire rope.

STANORUST Rust Preventives—The eight grades of STANORUST form one of the most complete and effective lines of rust preventives on the market today. Each has been scientifically and specifically developed for its intended use. The grades range from a finger print remover to a heavy petrolatum that protects against corrosion for years under the most severe outdoor exposure.

STANDARD

STANDARD OIL COMPANY (INDIANA

Here's How...to get the most out of.....



PICK THE STEEL FOR THE JOB

Latrobe produces a wide range of high speed steels and high carbon—high chromium die steels. Each has different characteristics—different uses. All of them, however, are Desegatized* steels—steels of full structural uniformity. To you, this means more uniform results—increased production efficiency—when you pick **the** Desegatized Brand steel for the job.

GET THE RIGHT SIZE

The **right** size stock will help you to prevent costly waste of your Latrobe Desegatized Brand steel. "Hogging" cuts from oversized stock waste steel—cause scrap loss—and use up larger sizes needlessly. Minimize this waste—reduce your scrap losses—order, stock and use the **right** sizes of Latrobe Desegatized Brand steels.

USE PROPER HEAT TREATMENT

Use the heat treatment prescribed for your Latrobe Desegatized Brand steel. Heat treating recommendations are the result of years of research by Latrobe's metallurgists and the experience of Latrobe's customers. **Proper** heat treatment of Latrobe Desegatized Brand steels will give you tools and dies capable of longer production runs—uninterrupted by failures on the job.

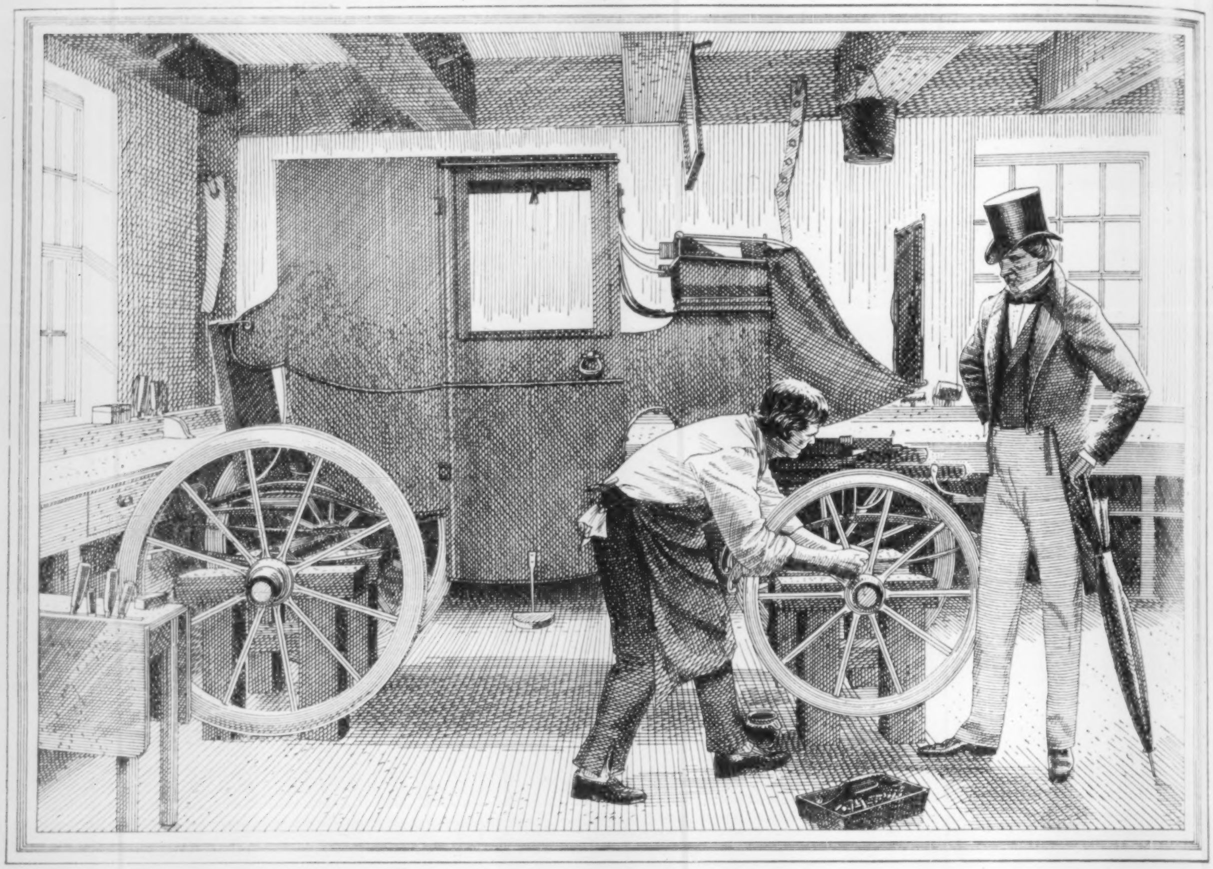
DO YOU HAVE OUR DATA SHEET ON LATROBE'S DESEGATIZED BRAND MOLYBDENUM HIGH SPEED STEELS? IF NOT, SEND FOR IT TODAY !

Branch Offices and Warehouses located in: BOSTON, BUFFALO CHICAGO, CLEVELAND, DAYTON, DETROIT, HARTFORD, LOS ANGELES, MILWAUKEE, NEW YORK, PHILADELPHIA, PITTSBURGH, ST. LOUIS, SEATTLE, TOLEDO.

Sales Agents:
BIRMINGHAM, DALLAS, DENVER, HOUSTON, WICHITA.

*Trade Mark Registered U. S. Pat. Office.

**LATROBE ELECTRIC
STEEL COMPANY
LATROBE, PENNSYLVANIA**



Craftsmanship. . . . 1951 Style

In 1838, Lord Brougham called on one of England's greatest coachmakers to construct a new style of coach invented by his lordship . . . each part to be handmade with craftsmanlike care, even to the carriage bolts.

Especial attention was paid to these bolts that held the other parts together. For it was realized that the performance of the assembled product depended largely on the performance of its fasteners.

Quality fasteners are equally important today to quality products such as modern motor cars. But, 1951 craftsmanship is more easily achieved . . . through the aid of *specialists*, like the RB&W worker in the small illustration. He specializes in fasteners alone, devoting a craftsman's skill to producing bolts, nuts, screws and rivets of uniform accuracy, dependability and physical properties.

Backing up his experience is RB&W's continuous research, development work, investment in large expansion and improvement programs . . . 106 years of experience in making the finest fasteners.

In the age-old tradition of craftsmanship, Russell, Burdsall & Ward gives industry the quality that *makes strong the things that make America strong.*

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

RB&W *the complete quality line*

106 YEARS MAKING STRONG
THE THINGS
THAT MAKE AMERICA STRONG

Plants at: PORT CHESTER, N. Y., CORAOPOLIS, PA., ROCK FALLS, ILL., LOS ANGELES, CALIF. *Additional sales offices at:* PHILADELPHIA, DETROIT, CHICAGO, CHATTANOOGA, DALLAS, OAKLAND. *Sales Agents at:* PORTLAND, SEATTLE. *Distributors from coast to coast.*

LEADERSHIP can't stand still

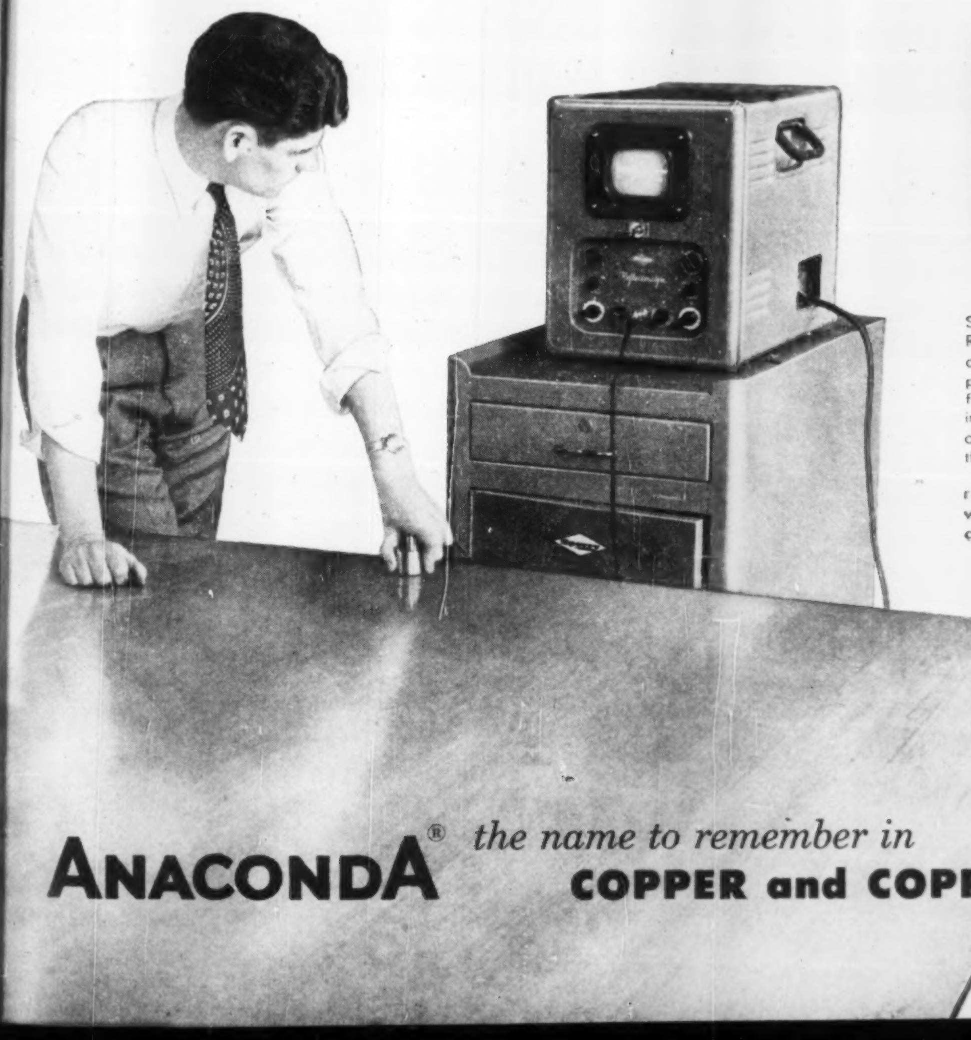
this time it advances on ultrasonic waves

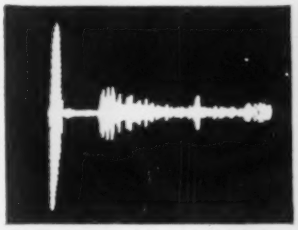
Because production isn't always perfect, inspection of all materials is essential to assure quality. When new inspection tools and methods have demonstrated their usefulness, they replace or supplement the old.

Nondestructive inspection *inside* the metal is now made possible through the Ultrasonic Reflectoscope. The American Brass Company has adapted its use to inspect large plates of copper alloys, thus making doubly sure that *hidden* defects are not present—defects which may appear in machining or forming operations and cause costly rejections.

In keeping with a tremendous mill-improvement program, the introduction of the Ultrasonic Reflectoscope in this industry is another indication of Anaconda's leadership in quality control in the field of copper and copper alloys. The American Brass Company, General Offices, Waterbury 20, Connecticut.

51103





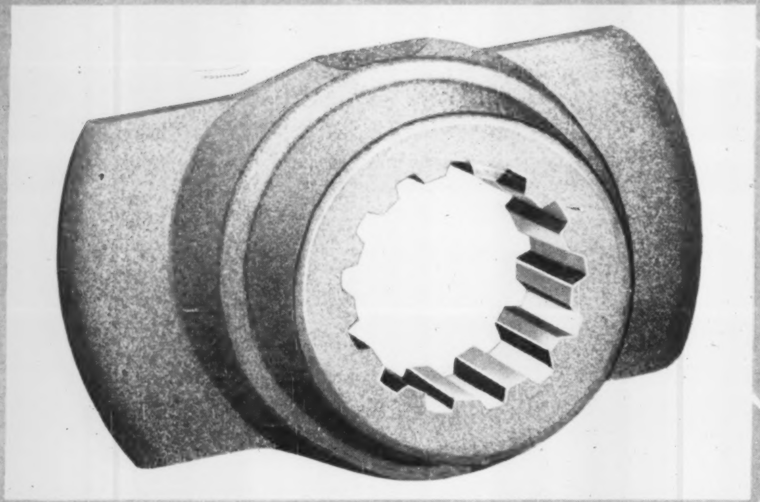
This is what happens:

Simple to operate, the portable Ultrasonic Reflectoscope sends intermittent high-frequency sound waves angularly into the plate. If unimpeded, the waves will reflect from the opposite edge of the plate and indicate a normal pattern on the screen of an oscilloscope, as illustrated opposite the headline.

Any hidden flaw or internal defect will result in a discontinuity of the wave and will be instantly evident on the screen, as pictured immediately above.

ANACONDA® *the name to remember in* **COPPER and COPPER ALLOYS**

Lower Cost-per-piece:



BROACH REDESIGN *cuts tool costs—boosts life*

SAVES *$450.00* MONTHLY

Redesign of the tools for this spline broaching operation resulted in a 24% reduction in original tool cost, 22% increase in the number of sharpenings per tool as well as a 14% increase in the parts produced per sharpening. The result in terms of cost-per-piece was a net saving of $450.00 per month.

Slight savings in production and sharpening time were effected due to the fact that this redesigned tool was shorter than the original. However, in many cases lowest cost per piece can be achieved only through redesign which increases tool length . . . a decision which is best made for each application by qualified broach specialists.

This spline operation is but one typical example of how Detroit Broach specialization in broaches and broaching tools pays off. Such specialization provides a back-log of experience which is unparalleled as the basis for sound recommendations. Whether you are considering conversion to broaching or more for your money on present broaching operations, don't fail to consult Detroit Broach. We will be very happy to supply actual cost and production data.

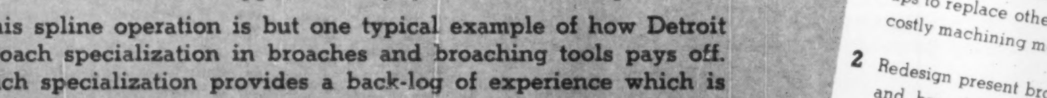
DETROIT BROACH CAN CUT YOUR COST-PER-PIECE

by

1 Developing broaching set-ups to replace other, more costly machining methods.

2 Redesign present broaches and broaching set-ups to make them more efficient.

WORLD'S LARGEST MANUFACTURER OF BROACHES AND BROACHING TOOLS EXCLUSIVELY



DETROIT BROACH COMPANY

2020I SHERWOOD AVE. • DETROIT 34, MICH.

Reynolds ALUMINUM REPORTER

A SERVICE TO INDUSTRY ON ALUMINUM USES AND DEVELOPMENTS

LOUISVILLE 1, KY.

NUMBER 5

REYNOLDS OPERATING MICHIGAN AIR FORCE PLANT

World War II Aluminum Extrusion Center now U.S.A.F. Manufacturing Methods Development Plant

The Reynolds Metals Company has taken over the management of the U.S. Air Force's Manufacturing Methods Pilot Plant at Adrian, Michigan.

Reynolds will operate the 20-million dollar government-owned facility without fee or profit to develop new forging and extrusion techniques and to prove theoretical designs for products in *all* metals.

The plant is available to any industry or government agency interested in development work on processes of either military or non-military interest.

A number of large manufacturing firms have already contracted for the use of Adrian plant and its development facilities.

The Curtiss-Wright Aircraft Company, in conjunction with the Air Force, has developed a new method for producing a hollow steel propeller by an improved extrusion technique. A 200 pound, 10-foot propeller blade tube is produced from a white-hot, 400 pound chrome-nickel molybdenum steel billet in minutes. This process, which is accomplished in three major stages, eliminated time-consuming operations of welding together, brazing and forming of two specially-processed flat plates which weigh 750 pounds before machining to produce the same size blade. At the same time this new process improves blade quality and strength-weight ratio.

Equipment in the plant consists of 16 hydraulic extrusion presses, largest of which is of 5,500 ton capacity. Others are of the 3,850-ton, 2,750-ton, and 1,650-ton capacity sizes. In addition, four German forging presses from the I. G. Farben Industries, with capacities, of 660—2,200—7,700 and 16,500 tons are now installed.

The factory building itself contains 700,000 square feet and is situated on a 73 acre site. No actual production will take place in the plant under the contract with Reynolds, except in the case of national emergency.

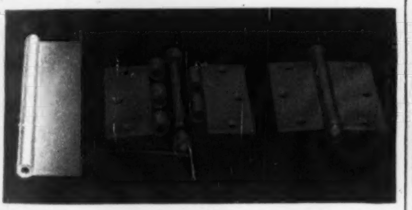
With the facilities at this new plant, Reynolds will promote constant research and development of new production methods.

For more information, write for copy of the new 24-page brochure detailing Adrian facilities and how they can serve you. Address your letter to Reynolds Metals Company, 2576 South Third Street, Louisville 1, Ky.

Aluminum Right for Hardware Fittings

Aluminum offers many qualities that add both appearance and durability to hardware fittings. It also is more economical than any other non-ferrous metal and is more desirable from several standpoints.

Aluminum hardware has a lasting, bright natural finish that requires no protective coating. And if special decorative effects are required, aluminum takes an extremely wide variety of finishes. In addition, aluminum offers strength with less weight for handling and shipping.



The hinge illustrated above is a good example of how the extrusion process can cut costs and simplify production of aluminum hardware. The undrilled piece is a section of an aluminum extrusion which is cut to specified hinge lengths. The tubular edge is then milled for mating hinge leaves. When screw holes are drilled and counter-sunk, hinges are ready for assembly with an aluminum pin. Decorative knobs made from aluminum screw machine stock are optional.

The extrusion process is also ideal for combining several elements into a single unit to eliminate excessive and costly assembly operations. A new 16 mm., sound-color movie, "The Shape of Things to Come" describes a variety of actual applications and the extrusion manufacturing process. Running time is 30 minutes. This movie is available without charge for individual showings, when requested on business letterhead. Write to Reynolds Metals Company, Motion Picture Dept., 2576 South Third Street, Louisville 1, Kentucky.

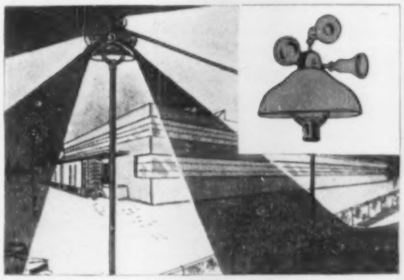
Die Cast Lighting Fixtures for Outdoor Use Afford Greater Defense Plant Security

Plants throughout the country, requiring dependable outdoor lighting systems for military security reasons, are turning to the use of die cast aluminum lighting fixtures.

The light weight, rust-resistant qualities of aluminum provide safe and economical operation of lighting systems that must function at peak efficiency despite exposure to severe climatic conditions.

Cast aluminum cluster lighting fixtures of this type are made by the Killark Electric Mfg. Company of St. Louis, Missouri. They have been proven in use for flood or spot systems on farms and factories, billboards and parking lots.

These fixtures make daylight out of darkness, and help put the permanence needed in outdoor lighting systems. Killark also manufactures a fully complementing line of aluminum light shields, wiring troughs, acorn fittings, extensions and adaptors. All are made of aluminum, assuring years of dependable performance.



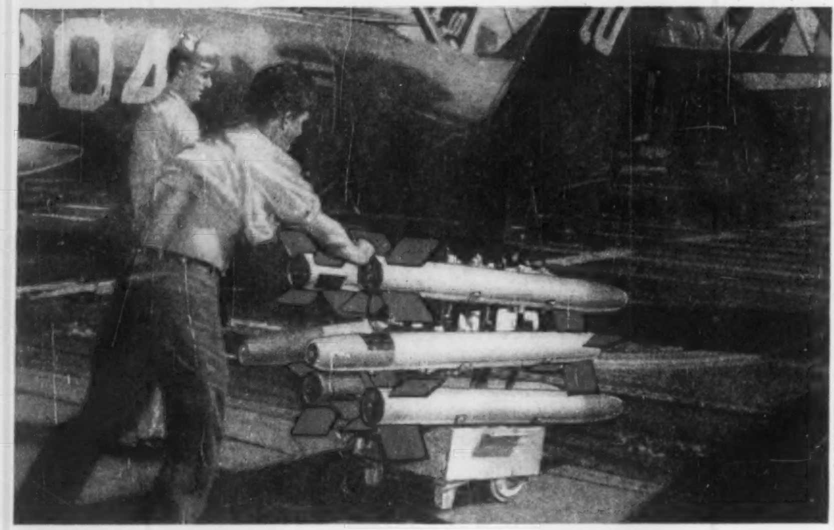
Directed beams with multiple fixture

Check the many advantages of die cast aluminum—minimum machining, fast production, durability, low cost—and see if it can help in your production problems. Call on the complete staff of Reynolds technicians for help in your designing. Look for the Reynolds office listed under "Aluminum" in your classified telephone directory. Or, write the Reynolds Metals Company, 2576 South Third Street, Louisville 1, Kentucky.

MORE INTERESTING NEWS ABOUT ALUMINUM ON NEXT PAGE

Printed in U. S. A.

Fabricating Service Speeds Production, Saves Scrap



Carting 5-inch rockets to Corsair, Skyraider for loading

Aluminum Rocket-fin Example of Service to Industry

Aluminum rocket fins guiding 5-inch rockets now being used by the air forces in Korea are among the many production items Reynolds Fabricating Service is engaged in producing for the Armed Forces. In the photo above, crewmen of the Navy and Marine Corps are shown preparing to load these effective missiles aboard war-planes for use against the enemy.

Although Reynolds is doing the basic mass-fabricating on the components, considerable amount of the assembly (including spot welding, seam welding, servicing and packaging) is being shared on a sub-contract basis with other aluminum fabricators under the Reynolds "Share-the-Work" plan.

This is only one example of the valuable service made available to manufacturers through the use of the Parts Fabricating Service. Formed or partially-formed parts are delivered to the manufacturer ready for finishing and assembly, resulting in scrap savings averaging 30% and valuable time gains.

Blanked parts eliminate costly tie-up of shipping and stockroom space . . . save in scrap handling and storage, make scarce material available for instant remelting.

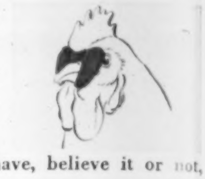
The manufacturer gets exact number of parts needed and is assured of maximum efficiency and a steady flow of inspected parts in any quantities or stage of completion desired.

Reynolds Aluminum Parts Fabricating Service is the *complete* service with equipment for shearing, forming, tube bending, roll forming, roll shaping, riveting, welding and finishing.

Reynolds is set up to work in co-operation with both large and small manufacturers. This program is directed toward combining the resources of all of the nation's businesses to supply the needed production for today's large volume of defense orders.

For complete information on how the Reynolds Parts Fabricating Service can help you, write for the free booklet, "Pounds of Parts...instead of Pounds of Metal". And for assistance on *special* aluminum fabricating problems, call the Reynolds office listed under "Aluminum" in your classified telephone directory. Or, write Reynolds Metals Company, 2065 So. Ninth St., Louisville 1, Kentucky.

Aluminum Chicken-Blinders Cut California Cannibalism



Our West Coast office has forwarded to us one of the most unusual aluminum items we have ever run across. In father's day, horse-blinders were common equipment, but now we have, believe it or not, *chicken-blinders!*

Poultry growers have long known that chickens are cannibalistic. The sight of fresh blood will incite large flocks of fowl to the extent that they turn and tear their kind to pieces. On large ranches, thousands of chickens have been killed at one time.

Chicken-blinders, stamped from sheet aluminum and fastened to the beak with a cotter pin, prevent the bird from seeing directly ahead and eliminates the urge to battle.

Although there are blinders made of other material on the market, the aluminum type has proven most satisfactory in service. The light weight combined with its non-corrosive qualities make it ideal for use under the type of conditions found in poultry yards.

Aluminum Foil Meets Military Packaging Specifications

Barrier Material, Grade A and Acetate Bonded Wraps Ready for Many Defense Purposes

Reynolds Aluminum Foil has moved from the pantry shelf to the shipping line in defense production plants throughout the country. The Reynolds Metals Company has turned the production of the valuable and versatile aluminum sheeting into packaging material that will meet the government's strictest military packaging requirements. The company has prepared a booklet, available upon request, containing samples and complete specifications for these requirements.

Aluminum Foil by itself and in combination with other materials answers thousands of packaging problems. From powdered milk to aircraft engines, wrenches to rifles, the moisture-proof, corrosion-resistant qualities of aluminum provide the ideal wrap for protective shipment.

SOLUBLE COFFEE PRODUCT
SOLUBLE COFFEE PRODUCT
SOLUBLE COFFEE PRODUCT

Acetate - Bonded Aluminum for Soluble Coffee, Powdered Milk, Sugar, Tea, Salt, Concentrates, Assault Rations, etc. Printed, pliable material for high-speed packaging. Takes firm, impenetrable heat seal...moisture-vapor proof, holds flavor, protects against contamination and light rays. Widths from 2″ to 25″—takes reverse printing.

ACCESSORY PACKET
CAN OPENER — CHEWING GUM
SALT — PEPPER — SUGAR
COFFEE — TEA
SOLUBLE MILK
CHICAGO QM DEPOT, CHICAGO, ILL.

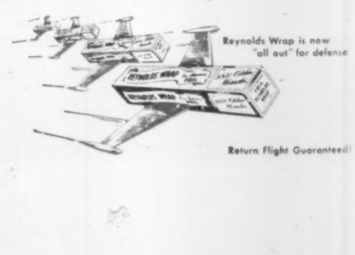
Barrier Material for Accessory Packaging. Very flexible foil-on-kraft with waterproof laminant and clear Vinyl Heat Seal Coating. For small packages — medical supplies, cigarettes, bandages, ration material and other quartermaster applications. Standard widths 24″ and 36″ for own printing and automatic packaging. Or write for data on preformed printed packages.

Barrier Material for Bags, Interior Packaging is a heavier version of above for larger bags, rougher handling. Also meets basic material specifications for a Grade A non-corrosive wrapping material. Tough and tear-resistant, supplied in same widths and style as above.

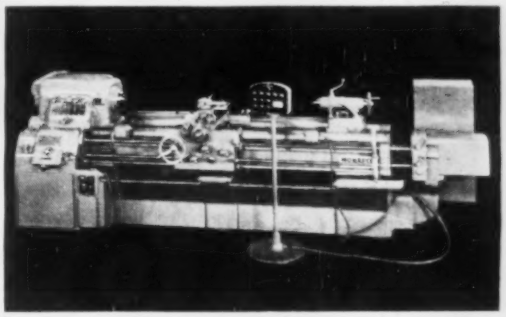
Barrier Material for Method II Packaging. Triple lamination of foil, cloth and heat-sealing plastic sheet. Designed for highest degree of moisture-vapor and physical protection—the Method II (carton-barrier-carton) application with desiccant. Standard 36″ width.

Aluminum Foil Grade A Wrap. For odd shapes, eliminates taping or tying, saves time in packing. Under certain moist atmospheric conditions, protects against galvanic and contact corrosion of metal parts. In .001″, .0015″, .002″ and .003″ gauges.

Reynolds Technical Service is at your disposal with extensive research facilities for development of new materials and packages. For free copy of booklet "Barrier Material for Military Packaging," contact your Reynolds Sales Office or write on business letterhead to Reynolds Metals Company, 2576 South Third Street, Louisville 1, Kentucky.


Reynolds Wrap is now "all out" for defense
REYNOLDS WRAP
REYNOLDS WRAP
Return Flight Guaranteed!

MONARCH
MOTOR TRACE CONTROL
PATENTS PENDING
FEED NO.1
FEED NO.2
FEED NO.3
FEED NO.4
FEED NO.5
LOW HIGH
ON OFF
CONTROL
AUTO FEED STOP
MOTOR TRACE
CYCLE STOP
INCH RIGHT
START CYCLE
THE MONARCH MACHINE TOOL CO.
SIDNEY, OHIO U.S.A.
TURN TO MONARCH
MOTOR-TRACE TURNING



PRINCIPAL FEATURES

- Completely automatic cycle enables one operator to handle two machines on most work and assures perfect duplication of size from piece to piece.
- Saves time on lots as small as two or three pieces because total setup never requires more than fifteen minutes, often much less.
- On straight, multiple diameter work, provides accurate size control without tracer being in constant contact with a template. This allows use of micrometer heads, gage blocks or a simplified form of flat template.
- Application does not reduce normal capacity of lathe which may be converted from automatic to manual operation in less than one-half minute.
- Permits the pre-selection and automatic use of as many as five different feeds for maximum cutting efficiency.
- Provides complete electric control from the point most convenient to operator.

For fast, repetitive shaft turning at its economical best, all signs point to the Monarch Motor-Trace. Any standard Monarch Lathe, 14" to 20" inclusive, can be factory-equipped with this automatic cycle, electric motor operated, electric tracer-controlled duplicating attachment. And its list of advantages results from 21 years of Monarch leadership in tracer-controlled lathe development.

You'll want full details, photos, performance data and case histories—so you can evaluate for yourself the benefits of Motor-Trace production in your shop. No ad can give it all, but our 12-page illustrated Bulletin #2302 does! We'll send it gladly, or any other information on the full Monarch line which today includes three tracer-controlled duplicating systems. Just indicate your interests. *The Monarch Machine Tool Company, Sidney, Ohio.*

Monarch

ACCURACY • ECONOMY • LONG LIFE

TURNING MACHINES

FOR A GOOD TURN FASTER . . . TURN TO MONARCH

THE MONARCH MACHINE TOOL CO., Sidney, Ohio

Gentlemen: Please send without obligation the following complete Bulletins:

☐ Bulletin #2302—The Monarch Motor-Trace
☐ Bulletin #2606—The Monarch Air-Gage Tracer
☐ Bulletin #2401—Monarch-Keller Controls

NAME ______________________ TITLE ______
COMPANY ______________________
ADDRESS ______________________
CITY ______________________ ZONE ____ STATE ______

"CATERPILLAR" DW21 TRACTOR AND NO. 21 SCRAPER

No Place for a Cracked Casting!

Inspecting castings under black light with automatic ZA-19 Zyglo Unit

How "CATERPILLAR"

- Gets Better Castings
- Eliminates Wasted Machining on Defective Castings
- Insures Unfailing Safety

USING AUTOMATIC CONVEYORIZED ZYGLO*

There's no place in "Caterpillar" machines for parts that may fail prematurely.

To safeguard the quality of its malleable castings Caterpillar Tractor Co. has for years used Magnaflux* and Zyglo* for receiving inspection. Lately a big, automatic ZA-19 Zyglo Unit has been added to provide highest speed inspection of a wide variety of castings.

By spotting defective castings *before* machining, this Zyglo Unit has substantially reduced machining time and costs. It is improving quality by revealing defects caused by variables in casting and enabling correction of foundry methods. Finally, it insures that no defective casting will find its way into a "Caterpillar" unit.

The Zyglo inspection is fast, simple and positive. Conveying and processing of castings and application of Zyglo fluorescent penetrant are fully automatic. The penetrant enters every crack or porosity defect. Then in the Zyglo inspection booth these defects are instantly revealed under black light as glowing indications.

Whether or not your inspection needs are like those of "Caterpillar", Zyglo or Magnaflux Magnetic Particle Inspection can in all probability give you similar savings and improved quality control. Ask an expert Magnaflux engineer to sit in with you soon.

Write for booklets on Zyglo and Magnaflux.

MAGNAFLUX CORPORATION

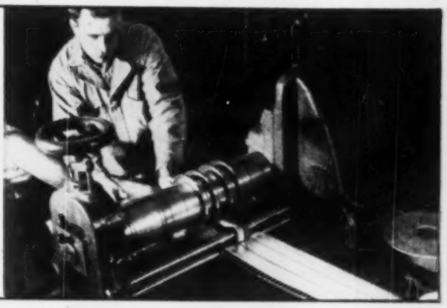
** Magnaflux and Zyglo are U. S. Registered Trademarks of Magnaflux Corporation.*

MAGNAFLUX CORPORATION
5912 Northwest Highway, Chicago 31, Illinois
NEW YORK 18 • CLEVELAND 15 • DETROIT 11 • DALLAS 9 • LOS ANGELES 58
Export Distributor: Curtis Wright Corp.
In Canada: Williams & Wilson, Ltd.

CHASE warehouses from coast to coast offer complete metal cutting services!

These 11 Chase warehouses do SLITTING

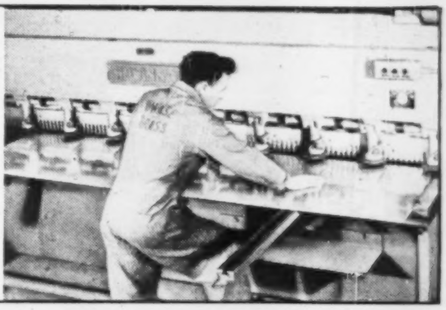
CINCINNATI
PROVIDENCE
LOS ANGELES
INDIANAPOLIS
CHICAGO
PHILADELPHIA
MILWAUKEE
ST. LOUIS
DETROIT
NEW YORK
NEWARK



These 7 Chase warehouses do SHEARING

CHICAGO
PHILADELPHIA
MILWAUKEE
ST. LOUIS
DETROIT
NEW YORK
NEWARK

These warehouses also do slitting



These 4 Chase warehouses do SAWING

DETROIT
NEW YORK
NEWARK
CHICAGO

These warehouses also do slitting and shearing

When it comes time for slitting, shearing or sawing, check the Chase Warehouses listed above for the cutting facilities each of them have.

Naturally, this work is done to your specifications on orders for metals we are able to fill. We'll help out, too, on *your* brass, bronze, copper, aluminum, steel, fibreboard or other materials. Just tell us how you want it. The work will be done accurately.

As usual—call Chase!

Chase BRASS & COPPER

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

• The Nation's Headquarters for Brass & Copper

Albany†
Atlanta
Baltimore
Boston
Chicago
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Cleveland
Dallas
Denver†
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Houston†
Indianapolis
Kansas City, Mo.
Los Angeles
Milwaukee
Minneapolis
Newark
New Orleans
New York
Philadelphia
Pittsburgh
Providence
Rochester†
St. Louis
San Francisco
Seattle
Waterbury

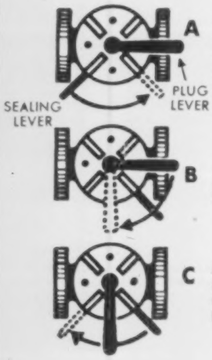
(†sales office only)

- at all times
- under all conditions
- throughout its long lifetime of service

This Homestead Valve will always work

it's **stickproof** because it's **lever-seald**

Simple as A-B-C



A Counter-clockwise turn of sealing-lever relieves seating pressure just enough to permit plug to turn.

B Plug lever turns plug to "open" or "closed" position.

C Clockwise turn of sealing-lever restores full seating pressure.

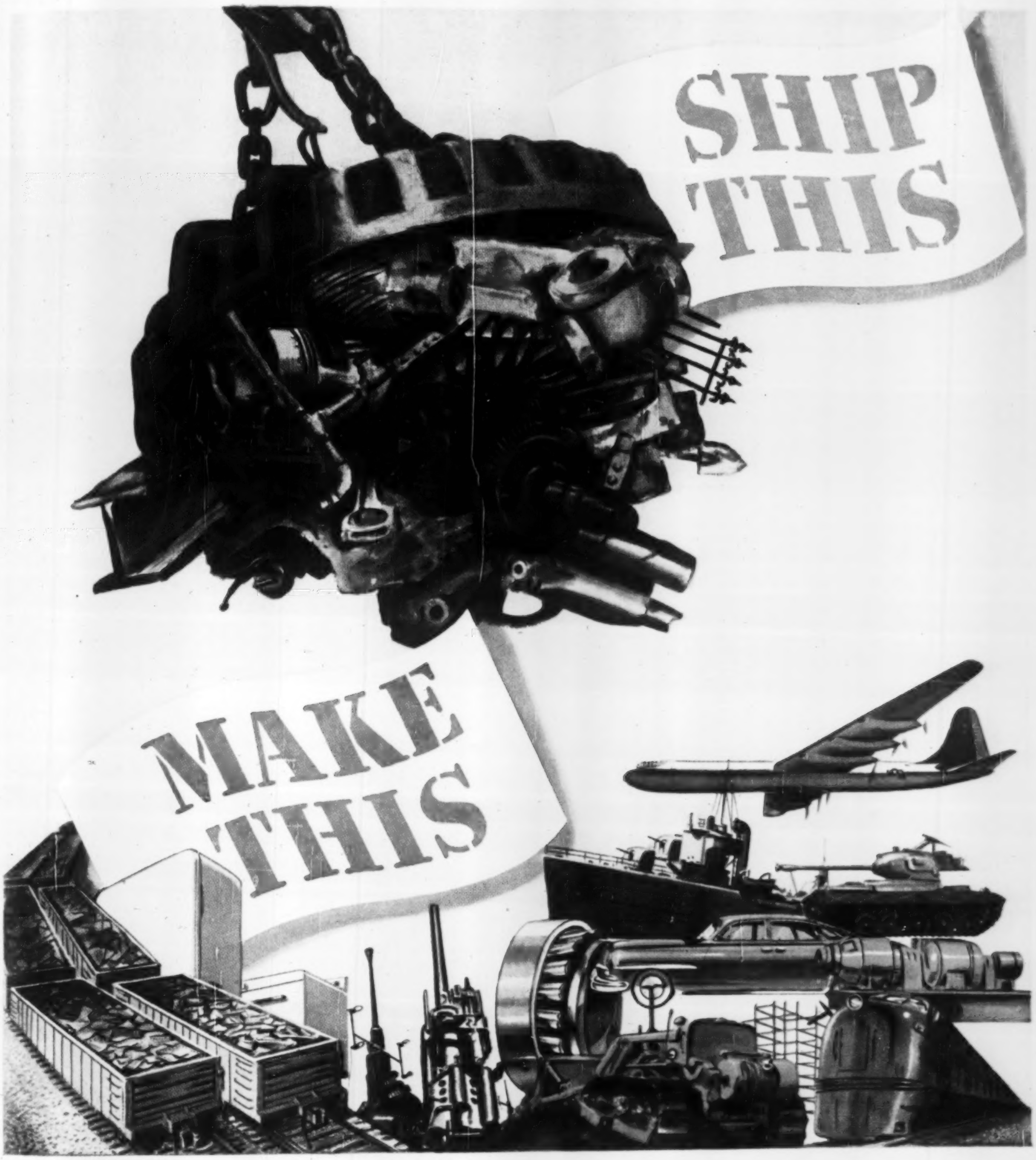
Homestead Lever-Seald Valves operate faster, too—16 to 28 times faster than screw-stem type valves. They require no lubrication . . . provide unobstructed, straight-line fluid flow with minimum pressure drop . . . afford maximum protection to sealing surfaces against corrosive and erosive line fluids. And because only a quarter-turn is needed for full opening or closing, they are ideal for installation in restricted areas where operation of other types of valves might be difficult.

Next time you have damaged or sticking valves, replace them with Homestead Lever-Seald Plug Valves. Once you use them you'll never be satisfied with ordinary valves.

For complete information write for Valve Reference Book No. 39-3.

HOMESTEAD LEVER-SEALD PLUG VALVES

HOMESTEAD VALVE MANUFACTURING COMPANY
Serving since 1892
P.O. BOX 22
CORAOPOLIS, PA.



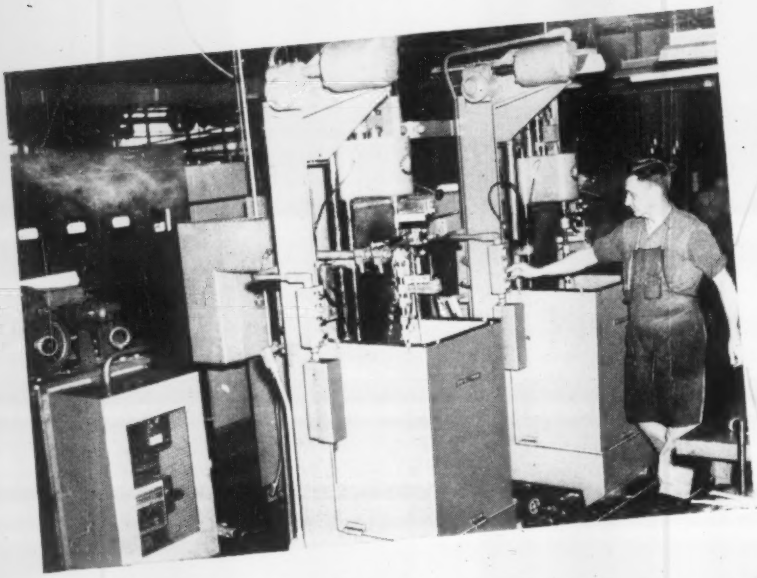
COLLECT & SHIP YOUR SCRAP NOW!

FULL COLOR REPRODUCTIONS AVAILABLE AT NO CHARGE

The above advertisement is a reproduction of a full color poster (22" x 28"), prepared and distributed by Luria Brothers & Company, Inc., through dealers and mills in cooperation with governmental efforts to keep scrap flowing in its normal channels. **Copies of the poster are available upon request without charge.**

LURIA BROTHERS & COMPANY, Inc.
Lincoln-Liberty Building, Philadelphia 7, Pa.
Kindly send me ( ) copies of the poster.
Name ....
Firm Name ....
Address ....
City .... State ....

WHICH OF THESE HEAT-TREATING PROBLEMS IS YOURS?



- Cost Reduction?
- Increased Production Rates?
- Quality Control?
- Reducing Distortion?
- Production-Line Heating?
- Floor Space?

WESTINGHOUSE RF HEATING HELPED SACO-LOWELL SOLVE ALL SIX

Saco-Lowell Shops, makers of outstanding textile machinery, had always experienced problems with hardened bottom front rolls.

A Westinghouse 50 KW—450 KC·RF Generator, with two standard vertical scanners, helped increase line production rates by 145% with total annual savings of $18,800.00. Direct labor costs have been cut 63%. Journal bearings are now ground after hardening, producing a higher quality roll. Formerly, every shaft required straightening; now this operation has been simplified and costs here reduced 70%.

Look at the results obtained by Saco-Lowell with a Westinghouse process that can handle *432* different rolls. Examine your heat treating problems. They, too, may be reduced, clarified, or eliminated entirely. Write to Westinghouse Electric Corporation, Induction Heating Section, 2519 Wilkens Avenue, Baltimore 3, Maryland; Write today.

J-02226

YOU CAN BE SURE...IF IT'S

Westinghouse

INDUCTION HEATING

DISSTON® CARBON TOOL STEELS

FIGHT WASTE

SELECT THE *RIGHT* ONE FOR THE JOB!

✓ BEST

✓ EXTRA

✓ STANDARD

ESTABLISHED 1840

REG. U.S. PAT. OFF.

Made in electric furnaces by accurately controlled melting practice, from carefully selected materials, and with expert supervision during every process.

DISSTON "BEST"

A carbon Tool Steel that is all that its name implies. On hardening, core can be kept soft and tough with full hardness on outside. Various depths of case, at any given heat-treating temperature, can be produced. And all factors, such as grain size, coarsening temperature, toughness and hardness of case, etc., can be controlled. Will be melted to individual user's carbon and/or Silicon specification, and, if desired, with small percentages of Chrome.

All Disston "BEST" Tool Steel must pass these tests: (1) microscopic, for cleanliness, (2) depth of hardness, according to specifications, (3) hardenability in a cone section, (4) deep acid etch for internal soundness, and (5) step-down test to show freedom of splits, seams or dirt at any depth.

DISSTON "EXTRA"

A fine quality Carbon Tool Steel that is indicated where a good, clean grade of steel with specified depth of hardness is required, but where the amount of work put on the steel or the subsurface cleanliness are not so great as to warrant the extra cost of Disston "BEST". Widely accepted for applications such as heading dies, blanking dies, punches and similar tools made in quantities, and where price is a factor. Usually stocked in the 1.00 to 1.10% Carbon range with Phosphorous and Sulphur .020%.

Tested before shipment for (1) microscopic cleanliness and homogeneity, (2) depth of hardness, (3) hardenability, and (4) deep acid etch.

DISSTON "STANDARD"

A good quality Carbon Tool Steel that is entirely suitable for the regular line of competitively priced hand and machine tools where depth of hardness is not an important factor. It is fine grained, medium hardening and clean. After heat-treatment, it shows a high degree of fatigue-resistance and a high elastic limit. May be specified in any Carbon range, but is usually stocked in .95 to 1.05%, with Phosphorous and Sulphur .020% maximum. Subjected to routine tests for surface condition and acid etch of ends of bars.

DISSTON metallurgists and engineers will be glad to help you solve any of your tool steel problems. Write for particulars.

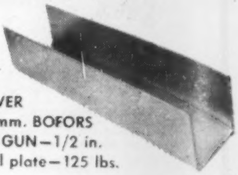
SCRAP: Everybody who wants to obtain steel can help himself to get it by immediately starting scrap into the channels that serve steel mills.

HENRY DISSTON & SONS, INC., 626 Tacony, Philadelphia 35, Pa., U. S. A.

Creative METAL STAMPINGS

Save METAL - TIME - COST
for Prime Contractors
of products for the Armed Services

A few of the many military metal stampings produced by the LEAKE organization



COVER
40 mm. BOFORS
AA GUN—1/2 in.
steel plate—125 lbs.

ELECTRICAL CONNECTOR LUG
Heavy Gauge
Copper
Tubing

RADIO PROXIMITY
FUSE HOUSINGS
SIGNAL CORPS—
Silver Brazed
Assembly

QMC REPATRIATION CASKET STAMPINGS:
Lid, Body, Base, Moldings, Rings, Plates, Clips

USAF NAPALM BOMB BAFFLES
.102" x 52S-0 Aluminum

COLD EXTRUDED CUPS
Steel Cartridge Cases

ORDNANCE
CAPACITOR
CAN—Deep
Drawn Brass

HALF TRACK GUIDE
& CROSS PLATES
SAE-4140 Steel

ORDNANCE
BOOSTER CASINGS

AIRCRAFT ALUMINUM
WHEEL FAIRINGS

NAVAL OIL FILTER SHELLS
Deep Drawn Brass and Steel

HEAD & BASES
FRAGMENTATION BOMBS
21,000 each daily

ORDNANCE BOMB FUSE
ADAPTER — 5/16-in. Drawn
Steel Plate

MAIN BEARING
AIRCRAFT ENGINE

TIMER HOUSING — NAVAL
DEPTH CHARGE -- Deep
Drawn Naval Brass and Steel

40 mm. BOFORS AA GUN:
Stamped Brass Components

IDLER WHEELS FOR TANKS
1/4-in. steel — 15-in. dia.

AERIAL DEPTH
CHARGE STAMPINGS

"WATER BUFFALO" STAMPINGS
Heavy Gauge SAE-4130 Steel

INCENDIARY BOMB STAMPINGS
CHEMICAL WARFARE BRANCH

TANK SEAT BACK STAMPING

BASE PLUG FOR 20 mm.
SHELL — .550" dia.
x .114" thick steel

AIRCRAFT SUPERCHARGER
BEARING SAE-4145 Steel

HEAVY GAUGE TANK STAMPINGS

SERUM BOTTLE HOLDER
ARMY MEDICAL DEPARTMENT

• FOR THE ASKING. *An illustrated booklet — "How Modern Stamping Techniques Can Help Conversion" describes and illustrates unusual stampings produced by modern Leake techniques. Single copies free when requested on your letterhead. Quantities at nominal cost.*

THE LEAKE ORGANIZATION *can furnish metal stampings in* ANY SIZE • ANY THICKNESS • ANY SHAPE • ANY ANALYSIS

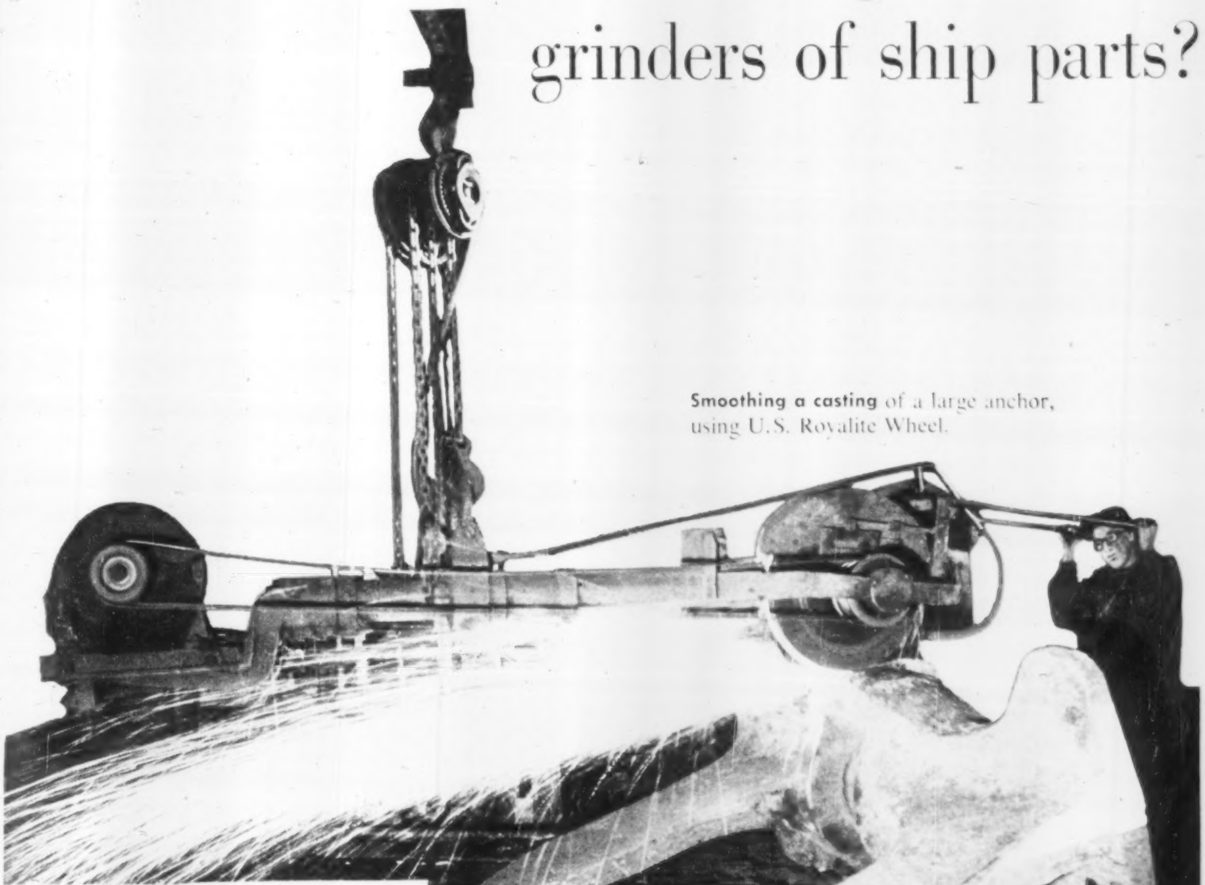
THE LEAKE STAMPING COMPANY · MONROE, MICHIGAN

LEAKE

EXPERTS IN PRESSED METAL

COMPLETE PRESSROOM—MACHINE SHOP
HEAT TREAT—BRAZING—WELDING
TESTING AND INSPECTION

What's U.S. Rubber doing for the grinders of ship parts?



Smoothing a casting of a large anchor, using U.S. Royalite Wheel.

Here a U. S. Royalite® Wheel is being used on intermediate strut for a ship's propeller shaft. In this particular steel foundry, "U.S." Wheels have been used for over 16 years.

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CENTRIFUGAL CASTINGS. BRASS OR Bronze centrifugally cast bushings. All bronze and brass analysis. Can meet all specifications including x-ray. Premium castings at no premium cost. Foundry Division, Centrifugal Castings Machine Company, P.O. Box 947, Tulsa, Oklahoma.

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Help Wanted

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FOREMAN—TOOL AND DIE. EXCELLENT opportunity for right man. Willing to relocate in Midwest area. Salary open. All replies completely confidential. Write Box 318, STEEL, Penton Bldg., Cleveland 13, O.

WANTED—LOCKSEAM TUBE MILL FOREman. Salary dependent upon qualifications. Established midwestern manufacturing concern. All replies kept confidential. Write Box 320, STEEL, Penton Bldg., Cleveland 13, O.

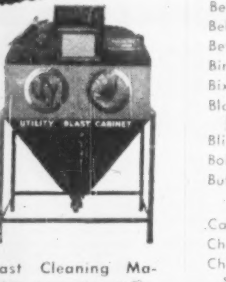
METALLURGIST — MANUFACTURER OF small, high speed mechanisms requires recent graduate or graduate with 4 or 5 years experience in process control including carburizing, nitriding and heat-treatment of ferrous parts. Some knowledge of properties and processing of non-ferrous materials desirable. New York State location. Give education, experience and salary required in reply. Write Box 304, STEEL, Penton Bldg., Cleveland 13, O.

WANTED — MIDWEST MANUFACTURING Plant needs an experienced Foreman for Stamping Department. In addition must be familiar with Deep Drawing Work. Replies held strictly confidential. Write Box 319, STEEL, Penton Bldg., Cleveland 13, O.

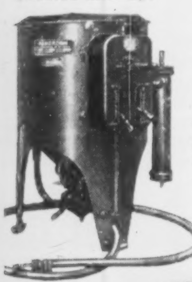
Here's How

Pangborn Solves these Problems with this Modern Equipment

BLAST CLEANING!

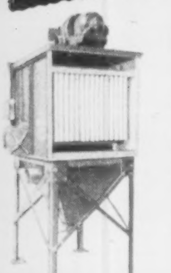


Blast Cleaning Cabinet cleans rust, grime, dirt, paint, etc., from metal parts. Produces a smooth surface on pieces up to 60" x 36". Models from $315.00 and up.



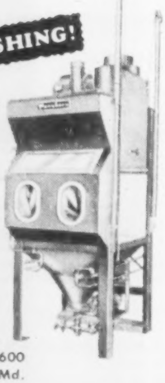
Blast Cleaning Machine removes rust, dirt, scale, etc., is ideal for maintenance work. Cleans large objects such as bridges, tanks, etc., before painting. Six sizes, portable or stationary from $170.00 and up.

DUST COLLECTING!



Unit Dust Collector stops dust at source, minimizes machine wear and tear, reduces housekeeping and maintenance costs. Solves many grinding and polishing nuisances. Models from $286.00 and up.

PRECISION FINISHING!



Hydro-Finish Cabinet uses liquid blast to polish, clean and finish molds, dies, etc. Removes scale, discoloration with minimum hand work. Holds tolerances to .0001". Models from $1295.00 and up.

Write for details on these machines to: Pangborn Corp., 1600 Pangborn Blvd., Hagerstown, Md.

Pangborn

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

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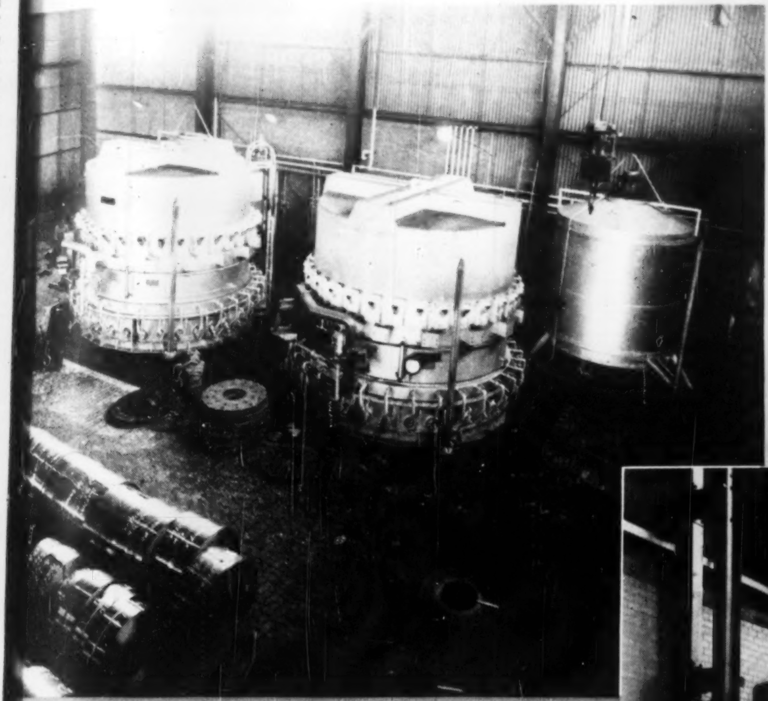
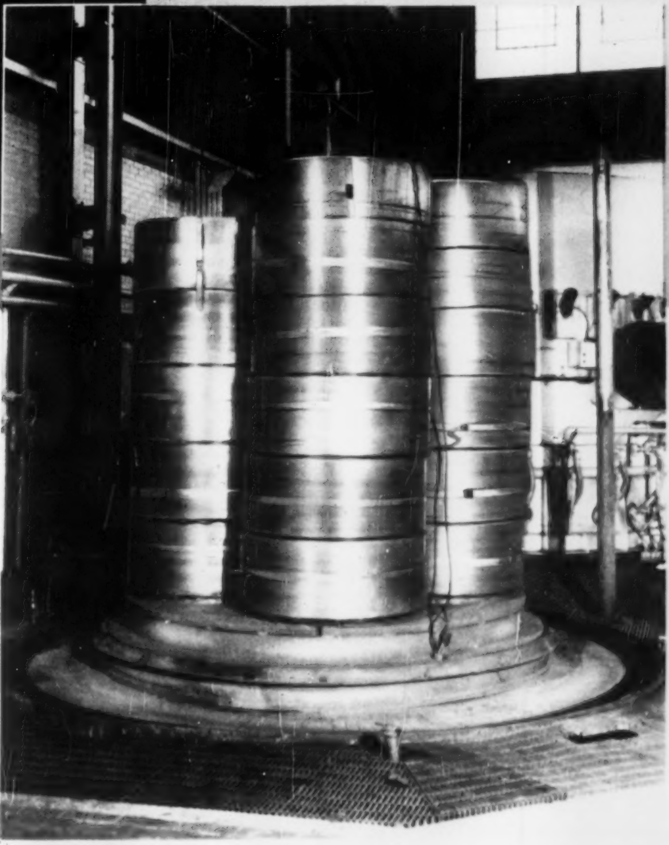
WILSON

HIGH CONVECTION ANNEALING FURNACES



These furnaces are installed at the Thomas Steel Company, Warren, Ohio, to anneal the steel coils rolled on their new 3-stand tandem cold mill.



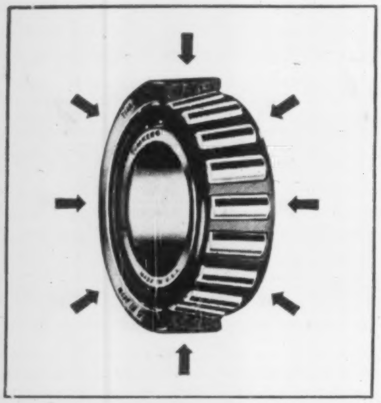
THIS unique installation of Wilson radiant convector bell type furnaces is designed for multiple stacking of small coils on a 90-inch diameter base, to use convectors in each stack and apply the Wilson convection system to all stacks with one central recirculating fan.

ENGINEERED AND CONSTRUCTED BY

Lee Wilson ENGINEERING Co., Inc.

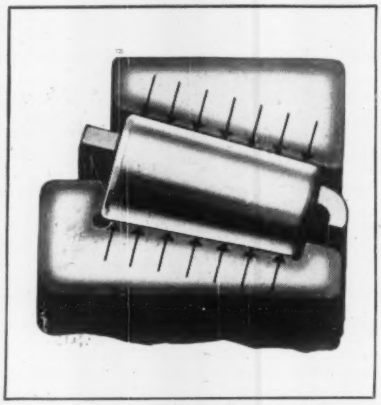
20005 WEST LAKE ROAD • CLEVELAND, OHIO
Telephone ED-1-6600

BELL TYPE FURNACES ★ RADIANT TUBE HEATING ★ ANNEALING PROCESSES



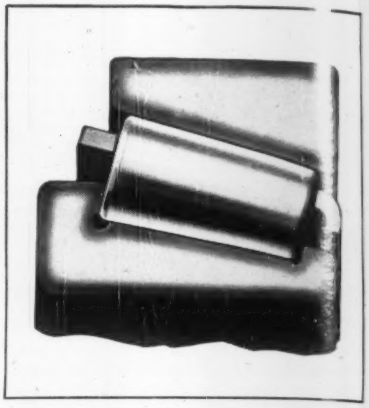
TAPERED CONSTRUCTION

Because Timken® roller bearings are tapered in design, they carry *both* radial and thrust loads. Shafts are held in alignment, auxiliary thrust bearings eliminated, easy adjustment permitted.



LINE CONTACT

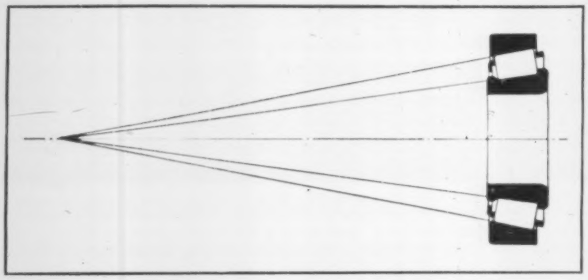
In Timken bearings, the load on the rollers and races is spread evenly over a *line* of contact. Because the load area is greater, Timken bearings offer extra load-carrying capacity.



HARD SURFACE, TOUGH CORE

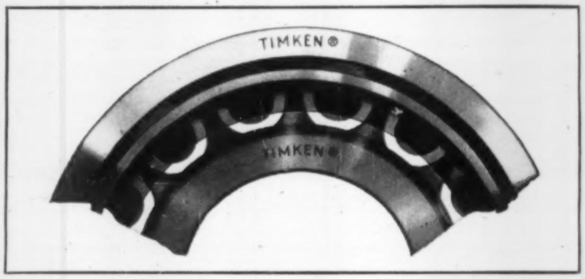
Made of Timken fine alloy steel, rollers and races of Timken tapered roller bearings are case-carburized, resulting in a hard, wear-resistant surface and a tough, shock-resistant core.

To get all this, get TIMKEN® bearings!



TRUE ROLLING MOTION

Since rollers and races of Timken bearings are tapered so that all lines coincident with their tapered surfaces always meet at a common point on the axis of the bearing, the rollers roll smoothly, frictionlessly. Wear is minimized, precision lasts longer. It's another big advantage you get in Timken bearings.



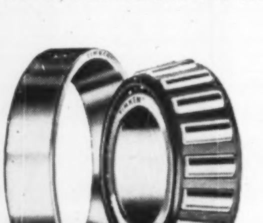
POSITIVE ROLLER ALIGNMENT

Wide area contact between roller ends and rib of the cone insures positive alignment of the rollers in Timken bearings—more precision, less friction, longer wear. Be sure the bearings you buy carry the trademark "Timken". The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN

TRADE MARK REG. U.S. PAT. OFF.

TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION